TAX POLICY FOR PENSIONS AND OTHER RETIREMENT SAVING

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PREFACE

The federal government encourages pensions, other employer retirement plans, and Individual Retirement Accounts through preferences in the federal income tax. These arrangements have been major focuses of legislation in recent years. This paper reviews the evolution of these tax-advantaged means of retirement saving and appraises their impact on saving and on retirement incomes. Senator Robert Dole requested the study while Chairman of the Senate Finance Committee. In accordance with the mandate of the Congressional Budget Office (CBO) to provide objective analysis, the report offers no recommendations.

Larry Ozanne and David Lindeman of the Tax Analysis Division prepared the paper under the direction of Rosemary Marcuss and Eric Toder. Many people inside and outside CBO reviewed drafts and provided valuable criticism and suggestion. They include Robert Hartman, Rudolph G. Penner, Pearl Richardson, Sylvester Schieber, Raymond Schmitt, Stuart Serkin, William Shear, Eugene Steuerle, Lawrence H. Thompson, Barbara Boyle Torrey, Bruce Vavrichek, and James Verdier. Earlier studies of employer pensions by Alicia Munnell and Richard Ippolito provided important background for the paper. Assistance in quantitative analysis was provided by Fritz Maier, Nancy O'Hara, Richard Kasten, and Frank Sammartino at CBO. David Kennell and John Sheils of ICF Incorporated simulated future retirement incomes. Responsibility for the finished product, however, rests with CBO. Francis Pierce edited the manuscript. Shirley Hornbuckle typed the many drafts of the paper and prepared it for publication. All members of the Tax Analysis Division contributed advice and support.

Edward M. Gramlich
Acting Director

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SUMMARY AND INTRODUCTION

The federal government helps increase retirement incomes through the tax advantages it gives to employer-sponsored retirement plans and to Individual Retirement Accounts (IRAs). The advantages given to these arrangements--generally called "qualified plans"--constitute one of the largest preferences in the federal income tax. Along with Social Security and other measures, they are intended to help assure adequate retirement incomes for as many workers as possible. They are also intended to stimulate national saving and economic growth.

Who uses the tax advantages? How large are they in the aggregate and how are they distributed across income classes and among those with similar lifetime incomes? Do they raise saving? What are the strengths and weaknesses of the variety of employer plans and IRAs in advancing retirement income objectives? What alternative policies could be pursued to ensure adequate incomes for retirees or to reduce the revenue losses of the tax advantages? These are the questions addressed in this paper.

DEVELOPMENT OF THE FEDERAL ROLE

As modern societies industrialized, they had to develop new ways for people to meet their consumption needs in retirement. The traditional systems of preindustrial society--the extended family, employer benevolence, craftsmen's guilds, war pensions, sinecures, and local charities--no longer could perform this function adequately, the more so as ever larger numbers of people lived beyond their prime working years and, increasingly, to advanced ages. New arrangements were needed to assure that workers and their dependents would have enough income to maintain themselves after retirement, disability, or death.

One nearly universal response to this movement from traditional to modern society has been the creation of public programs to meet the exigencies of retirement, disability, and death--such as, in this country, the

Social Security program. 1/ Most workers who spend much time in the labor force are required to participate in Social Security and, in exchange, are promised various levels of retirement income. Because Social Security is also designed to redistribute income, it replaces a larger proportion of earnings at lower income levels than at higher. 2/ At the bottom end of the income distribution, Social Security benefits can fully replace previous earnings levels. 3/

An equally important response in many developed countries has been the occupational pension, usually sponsored by employers. During this century, the U.S. government, like governments in other industrial societies, has steadily increased its intervention in occupational pensions and similar arrangements. The growth of federal income taxation required that the government decide how to tax pensions, deferred profit-sharing, and the other private sources of retirement income. 4/ Through tax incentives and regulation, it has encouraged and supervised a complementary tier to Social Security consisting primarily of employer-sponsored pensions and similar arrangements. Generally, these are described as "qualified plans" because they meet the various conditions laid out in the tax code for preferential tax treatment. The federal government has also intervened in pensions and other employer-based plans as an umpire in labor-management relations and as the principal regulator of national fair labor standards.

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1. The program's actual title is Old-Age, Survivors, and Disability Insurance (OASDI). The more common term Social Security is often meant to include the Medicare program as well. In this paper, the phrase Social Security connotes only the cash programs.

2. Compared with a typical occupational pension, lower-wage workers in Social Security receive above-average rates of return and replacement rates, and higher-income individuals receive correspondingly below-average rates of return and replacement rates.

3. The federal government's role in retirement security also encompasses other spending programs. For example, the Supplemental Security Income and other welfare programs provide means-tested cash and near-cash assistance for the elderly, disabled, and widowed. In addition, the Medicare and Medicaid programs limit the extent to which health expenditures can dominate the resources of such households.

4. The elderly have income and resources from private assets other than qualified plans, much of it fostered by the federal government. In particular, homeownership is an important form of asset accumulation for old age, which the federal government facilitates through the tax code, and other means.

THE NATURE OF THE TAX ADVANTAGES AND THEIR EFFECT ON REVENUES

Normally the federal government taxes income whether the taxpayer saves it or spends it. A deposit in a regular savings account or the purchase of an asset, such as stock, is not deductible from income. Subsequent income earned by the savings account or asset is also taxed, in many cases annually. Thus, for example, interest and dividends are fully taxable each year.

The largest exception to this rule is that granted to saving in IRAs and in employer plans that qualify under conditions of the Internal Revenue Code. In those cases, taxation of most contributions and all investment income is deferred until the funds are withdrawn. This deferral is equivalent to taxing a contribution at the beneficiary's tax rate in retirement, when rates are generally lower than during working years, and then not taxing the investment income earned by the after-tax contribution. (The tax advantages are substantially less when contributions are not initially excluded from taxable income, as in after-tax employee contributions to pensions, and, starting in 1987, IRA contributions by higher-income employees covered by a pension. In these cases, taxes on the investment income are merely deferred, not forgiven.) 5/

The annual revenue loss to the federal government from the tax advantages for employer plans, plans for the self-employed, and IRAs will be nearly $60 billion in 1988. It would be even greater had not the Tax Reform Act of 1986 reduced tax rates and restricted some uses of IRAs and qualified plans. It continues to account for the largest annual revenue loss of all the preferences in the individual income tax structure.

THE COMPARATIVE STRENGTHS OF DIFFERENT PLANS AND IRAs

Employer plans differ widely in the risks and rewards they pose, as do IRAs. Defined benefit plans--those that specify a monthly retirement benefit to the employee--impose large penalties on workers who leave employment much before retirement age. Participants in them are also penalized if a firm terminates its defined benefit plan. Defined contribution plans--those

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5. Taxes are also deferred rather than forgiven on capital gains, deferred annuities, and life insurance policies.

that specify a regular contribution for the employee--do not penalize workers who change jobs (unless they leave before vesting) or when a plan is terminated. However, the payments from such plans are more uncertain for the career-long employee because they depend on the rate of return earned by a plan's investments.

IRAs, salary reduction plans such as 401(k) plans, and thrift plans allow people to tailor their retirement saving to their own needs more than do the mandatory plans employers have traditionally sponsored. Such flexibility also allows them to save too little to meet their retirement needs. The risk that they will save too little is moderated in thrift and salary reduction plans by nondiscrimination rules that frequently lead employers to encourage and supplement employee contributions. IRAs have no such incentives. Traditional pension and profit-sharing plans require generally uniform rates of benefit accrual or contribution that are difficult for individual workers to circumvent. Employer plans as a group, however, do not provide equal access to tax-advantaged saving because many employers choose not to offer plans, and because those who do offer them differ in the extent and type of their plans.

WHO USES QUALIFIED PLANS AND IRAs?

Pension participation grew rapidly after World War II and into the 1960s, but it has been constant since the early 1970s. In 1983, just over half of full-time employees participated in employer pension plans. Older and higher-paid employees, union members, and employees of large companies are most likely to participate. Among industries, participation ranges from 81 percent in government and communications to 67 percent in durable goods manufacturing, 36 percent in services, and 29 percent in retailing. As the baby boom generation moves into the ages and earnings levels where pensions are most common, participation may grow somewhat. On the other hand, it may remain at present levels if employment continues to shift from manufacturing to services, where smaller and nonunion employers have been traditionally less likely to sponsor pensions.

IRAs expanded rapidly after they became available to all workers in 1982. About 17 percent of all workers contributed in the first 16 months they were eligible. Participation in IRAs has been almost twice as common among those participating in pensions as among those who are not, and it has been even more concentrated among the older and higher paid. This means that the provision of the 1986 tax act phasing out the deduction for IRA contributions for people covered by employer pensions will affect the population that now most uses IRAs. Under the new limits, about 40 percent of those who most likely would have contributed to an IRA in 1988 will not be eligible for any deduction, and another 12 percent will be eligible for only a partial deduction.

Salary reduction plans, and 401(k) plans in particular, have been growing rapidly since 1982, although not as explosively as IRAs. Over a quarter of the employees in medium and large firms had the opportunity to contribute to such plans during 1985. The 401(k) plans appear to have been more successful than IRAs in attracting contributions from lower-paid and younger employees. This apparent success is probably because the 401(k) plans have been offered at firms whose employees are interested in such plans, because employers match employees' contributions under them, and because participants often have preretirement access to the funds through loan arrangements.

THE SIZE AND DISTRIBUTION OF POTENTIAL BENEFITS FROM THE TAX ADVANTAGES

The tax advantages of qualified pensions and IRAs can raise after-tax retirement incomes substantially. Projections of the retirement incomes of today's workers indicate that the gains will be distributed somewhat unevenly by income and even more unevenly by job tenure. This pattern of distribution results from a number of factors: not all workers participate in such plans; some plan rules exclude certain classes of employees and delay vesting; and people who change jobs are likely to lose much of the value of their defined benefits through preretirement inflation.

CBO estimates that the tax advantages, even without any increase in personal saving, will raise after-tax retirement incomes of retired couples by 21 percent in 2019. The projected gains are strongly related to income. The gain among the poorest quartile of elderly couples is 14 percent compared with 24 percent among the richest quartile. The poorer half of single persons, with incomes below or near the poverty level, gain almost nothing from the tax advantages. This population consists almost entirely of women with limited work histories and pension coverage and with very little income from the plans of former husbands.

The gains in retirement income are even more strongly related to job tenure than to income. Among lower-middle-income retired couples, for example, those who work 20 or more years for one employer will have gains from the tax advantages equal to 25 percent of their income, while those with shorter tenures will gain only 10 percent.

THE EFFECT OF QUALIFIED PLANS ON SAVING

Studies have consistently found that pensions are not fully offset by reduced saving, but add to the total wealth of participating employees. Recent estimates are that the total wealth of older workers increases by 30 cents to 40 cents per dollar of their pension wealth. (The increase in after-tax income should be somewhat smaller.) The estimated increase in wealth is within the range to be expected from the more rapid accumulation of assets permitted by the tax advantages of qualified plans, and therefore does not appear to reflect much increase in personal saving. Though pensions may not cause people to save more, their higher retirement wealth represents greater national saving unless the revenue loss from the tax advantages has been financed by greater federal borrowing or offsetting taxes on capital income. The evidence is inconclusive as to whether qualified plans raise wealth and saving among younger and poorer workers, or whether IRAs raise saving among workers of any age.

THE TAX REFORM ACT OF 1986

The Tax Reform Act of 1986 made substantial changes in the rules governing qualified plans. By altering the tax rate structure and interest deduction rules, it has made even greater changes in the overall tax environment in which the plans operate.

Effects of Rules Changes

The act continues some recent trends in public policy toward qualified plans. These trends are in part a response to continuing budget deficits and in part a response to equity issues associated with use of the tax advantages.

First, the Congress has imposed further restrictions on the ability of relatively well-to-do people to accumulate large amounts of retirement income on a tax-favored basis. The effective income limits are generally lower for those types of plans that allow more individual flexibility. Hence, tax-favored saving through IRAs has been restricted the most, saving through qualified thrift and salary reduction arrangements less so, and that through traditional pension and profit-sharing plans the least.

Second, by imposing new coverage tests, faster minimum vesting schedules, tighter integration rules, and new nondiscrimination rules for salary reduction and thrift plans, the Congress has strengthened the policy objective expressed in other recent legislation--that the payments from, and tax advantages of, qualified plans should be more evenly distributed by income and job tenure. In particular, the Congress has reinforced the recent emphasis it has placed on benefit outcomes. The new integration rules also indicate a more deliberate attempt to correlate Social Security and qualified plans so as to produce certain combined payment results.

Third, the act reinforces the policy objective that qualified plan accumulations be used for retirement income, not for short-term saving. This goal was supported primarily by imposing an additional income tax on those who use their plan proceeds for nonretirement purposes, and an excise tax on employers when they retrieve excess plan assets.

While the effects of these changes on the distribution of probable outcomes from qualified plans have not been estimated, it is unlikely that the changes will greatly alter benefits from what would have occurred under prior law. In defined benefit plans, inflation before retirement will continue to erode most of the benefits accrued by short-service workers, including those benefits that were created by the 1986 act or that would be created by further restrictions in the coverage and vesting rules. In addition, few major plans fail to satisfy the coverage and integration limits of the 1986 act; and the top-heavy rules legislated in the Tax Equity and Fiscal Responsibility Act of 1982 have already eliminated the most skewed plans among small and medium-sized employers.

Effects of New Tax Rates

By itself, the new simplified tax rate structure with its two brackets of 15 percent and 28 percent probably will not alter the basic demand among workers for qualified plans. Even among the taxpayers for whom reductions in marginal rates will be most significant, saving through qualified plans will continue to generate a better rate of return than any other alternative. By the same token, however, because the lower tax-rate structure for the upper-income population will shrink their income gains from participating in qualified plans, it thereby diminishes the amount of such gains that can be redistributed to other workers.

The combined effect of the rule changes and new tax rates on qualified plans will vary: large plans in the industrial and unionized sectors of the economy will probably not be affected, while those of medium- and smaller-sized employers may. By shrinking the gains available to finance redistribution, and by making redistribution harder to avoid, the act may result in fewer traditional pension plans--with their fixed employer commitments--being established or continued in firms where the demand for retirement saving is weak. Thrift and salary-reduction plans, which allow rank-and-file workers to sort themselves according to their saving preferences, may become increasingly attractive in firms where the demand for retirement income is not very uniform.

Certain tax reduction strategies that enable people to combine qualified plan saving and interest-deductible borrowing will be heavily restricted. They will still be possible for many homeowners, however, because of the availability of deductions for mortgage interest.

LEGISLATIVE OPTIONS

The tax advantages for qualified plans and IRAs constitute the largest tax preference in the individual income tax. Yet, though these advantages boost retirement incomes, they probably do not significantly raise personal saving rates. In addition, the retirement income gains traceable to these advantages are skewed to highly-paid workers and, even more so, to workers who spend 20 years or more under one pension plan. Yet all other taxpayers--including workers who are never covered by a plan or who change jobs relatively often--bear the costs of these gains in retirement income in the form of higher tax rates, lower government spending, or increased federal debt. Because of the questionable saving effects and uneven distributional outcomes, the Congress might decide to alter further the size and distribution of these tax advantages. The paper examines the following measures that the Congress might consider.

First, the Congress could reduce the tax advantages either by imposing even tighter limits on contributions to qualified plans or by subjecting the investment income of qualified plan trusts and IRAs to a special income tax rate of, for example, 5 percent. The resulting reductions in retirement income would be borne by workers mostly in the upper half of the income distribution.

Second, as it has already done in legislation about vesting and the like, the Congress could further alter the distribution of the gains in income traceable to the tax advantages. In particular, the Congress could impose new requirements to limit the extent to which inflation erodes the value of deferred annuities in defined benefit plans. Additionally, by expanding salary reduction arrangements or tax-favored individual saving in ways beneficial to middle-income earners, the Congress could bring about a more even distribution of tax advantages among all workers.

Finally, the Congress could use monies from decreasing the tax advantages to expand Social Security or Supplemental Security Income payments to those elderly who now receive the least gains in retirement income from those tax advantages.

CHAPTER I

THE TAX ADVANTAGES OF SAVING IN QUALIFIED PLANS AND THEIR EFFECT ON REVENUES

This chapter describes the income tax advantages accorded to retirement plans that qualify for them under the Internal Revenue Code. 1/ It also considers how these tax incentives fit the aims of public policy. Finally, it offers estimates of revenue losses resulting from the tax advantages.

THE TAX ADVANTAGES OF SAVING IN QUALIFIED PLANS

The federal income tax law contains substantial advantages for individuals who participate as employees in qualified employer-sponsored retirement plans and for those who contribute to their own Individual Retirement Accounts (IRAs). The tax advantages are essentially twofold: 2/

- Employers' contributions (and some types of employee deferrals of wages) to a qualified plan are not taxed as compensation to individual employees at the time of deposit; rather, the participants pay tax on them later when payments from the plan are received. So also, many deposits in IRAs are not taxable until distributed in retirement.

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1. In this report, unless pensions, profit-sharing, or stock-bonus plans are specifically distinguished, the phrase "qualified plans" should be read to include all three, as well as such tax-favored saving plans as thrift plans or 401(k), 403(b), and similar salary reduction arrangements. In general, the term "qualified plan" should also be read to include IRAs, although technically they are not qualified plans as such. Unless distinguished, these various terms include provision for disability and preretirement survivor benefits when those benefits are an incidental part of the pension plan. As a result of legislation in 1982, the distinctions between plans for the unincorporated self-employed (Keogh or H.R. 10 plans) and other plans no longer apply after 1984. The paper generally will not distinguish Keogh-type plans from other employer-sponsored plans.

2. Distributions from pensions are additionally tax favored in both income and estate taxation. For example, some lump-sum distributions are allowed income averaging. This paper, however, does not focus on these and similar tax advantages.

- Interest and other investment income earned within qualified plans and IRAs accumulates tax free until the time at which that investment income, along with the original contributions, is received by the participants.

These provisions shift the taxation of income from the time it is originally earned until the time it is withdrawn and used, and they do so in an exceptionally favored way. Consider a person whose tax rate in retirement is the same as it was in his or her working years. The taxes owed at withdrawal equal the taxes he or she would have paid on the original contribution if it had been received as earnings plus interest on that postponed liability from the time of deposit to the time of withdrawal. The individual retains in retirement an amount equal to the after-tax remainder of the original contribution plus all the interest and other investment income earned by that remainder. 3/ In effect, taxes are permanently forgiven on this component of investment income. If also, as often happens in retirement, a person's tax rate at the time of withdrawal is lower than it was at the time of deposit, then he or she retains a larger after-tax remainder and associated tax-free investment income on that remainder. 4/

Another way of expressing the combined effect of the advantages is that a person can transfer consumption from working years to retirement years at a rate equal to the before-tax interest rate, rather than the

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3. This result can be seen by examining the value of a qualified plan distribution funded with before-tax contributions after it has been taxed in retirement. That after-tax value in retirement, Q, is:

$$Q = (1-t)\,W\,(1+r)^n$$

where t is the beneficiary's tax rate, W equals forgone wages deposited into the qualified plan in the working years, r is the interest rate, and n is the number of years over which the original deposit earns interest or some other type of investment income. This after-tax distribution, Q, is equivalent to taxing the original deposit and then allowing the after-tax amount to accumulate at a market rate of return with no further taxation.

4. The added gain from a lower tax rate at withdrawal can be seen in the preceding footnote by ascribing a lower tax rate to the value t in the formula. For example, if a taxpayer's tax rate in retirement is 15 percent, he or she gains more than if the contribution had been taxed at the 28 percent tax rate that the taxpayer may have encountered while working.

The added gain from effectively taxing the contribution at a lower retirement tax rate is considered by some observers an appropriate provision for lifetime income averaging in a tax system with a progressive rate structure, rather than as a preference.

after-tax rate. This exceptional treatment of qualified plan savings in the current income tax code is how all savings would be handled under an expenditure or consumption tax.

When the first advantage is forgone and only the second advantage is allowed--that is, when contributions to a qualified plan or an IRA are taxable but the tax on interest is deferred until withdrawal--the gain remains significant, but it is not as substantial or exceptional. 5/ Taxes on investment income earned by after-tax contributions to a qualified plan and to a nondeductible IRA are only deferred, not forgiven.

Table 1 illustrates the potential value of the tax advantages associated with saving in a qualified plan, especially as compared with saving in a regular savings account. A regular savings account is funded with deposits that come from after-tax income and accumulate only at an annual after-tax interest rate--that is, the interest or investment income earned in such an account is taxed annually. 6/ The table assumes that a person age 45 has $1,000 in wages and wishes to save it for 15 years for purposes of retirement at age 60. The market interest rate during the full 15 years is assumed to be 8 percent.

The first example in the table applies to a taxpayer who is in the 15 percent bracket when working and when retired. In a regular savings account, the taxpayer can deposit $850 after tax, which will compound at an effective (after-tax) interest rate of 6.80 percent and will yield $2,280 at

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5. Other investment instruments receive similar deferred income tax treatment--notably, capital gains, whole life insurance policies, and individual deferred annuity contracts. This value can be seen by examining a distribution from a qualified plan funded with after-tax employee contributions. In this instance, the deposit into the qualified plan account equals (1-T)W, where T is the tax rate in the working years and W equals the amount of wages devoted to after-tax savings. This amount accumulates to the value $(1-T)\ W\ (1+r)^n$ before distribution and taxation in retirement at the rate t. At that time, a taxpayer is allowed to recover tax-free only that amount equal to his original after-tax deposit. Thus, the result after taxation in retirement is

$$G = (1-t)(1-T)\,W\,[(1+r)^n - 1].$$

6. The withdrawal from a regular savings account can be expressed as:

$$R = (1-T)\,W\,[1+(1-T)r]^n$$

where terms are as defined in the preceding footnotes.

TABLE 1. TAX ADVANTAGES OF A $1,000 CONTRIBUTION TO A QUALIFIED RETIREMENT PLAN

	Example 1: Tax Rate of 0.15 in Working Years			Example 2: Tax Rate of 0.28 in Working Years		
	Regular Account a/	Thrift Plan b/	401(k) Plan c/	Regular Account a/	Thrift Plan b/	401(k) Plan c/
Contribution	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000
Tax on Contribution	150	150	0	280	280	0
Deposit d/	850	850	1,000	720	720	1,000
Value at Withdrawal	2,280	2,696	3,172	1,668	2,284	3,172
Retirement Tax Rate	--	0.15	0.15	--	0.28	0.28
Tax on Withdrawal	0	277	476	0	438	888
Net Withdrawal	2,280	2,419	2,696	1,668	1,846	2,284
Gain Over Regular Account	--	139	416	--	178	616
Percent Gain	--	6	18	--	11	37
Alternative Retirement Tax Rate	--	0	0	--	0.15	0.15
Tax on Withdrawal	0	0	0	0	235	476
Net Withdrawal	2,280	2,696	3,172	1,668	2,049	2,696
Gain Over Regular Account	--	416	892	--	381	1,028
Percent Gain	--	18	39	--	23	62

SOURCE: Congressional Budget Office.

a. A regular savings account is funded from after-tax income, with interest or investment income taxed annually.

b. Thrift plans are funded from after-tax income, with investment income taxed at the time of withdrawal.

c. A 401(k) plan is funded from before-tax income, with the full account taxed at the time of withdrawal.

d. Deposited for 15 years at 8 percent interest.

age 60. 7/ If, instead, the taxpayer diverts $1,000 of wages into a qualified salary reduction ("401(k)") arrangement or, equivalently, a deductible IRA, 8/ that full amount will compound at a market (before-tax) interest rate of 8 percent for 15 years and, after taxation at age 60, will yield $2,696. The taxpayer gains $416 in after-tax retirement income, an 18 percent increase over what could be achieved in a regular savings account.

The gain from saving in a qualified plan is even greater for a person facing a higher tax rate. The second example shows a person paying the 28 percent tax rate both when working and retired. For this taxpayer, only $720 remains after taxes for deposit into a regular savings account. That amount will compound at an after-tax interest rate of 5.76 percent, yielding $1,668 at age 60. If, instead, $1,000 of wages goes into a 401(k) arrangement to compound at 8 percent, the after-tax withdrawal is $2,284. In this case, the $616 gain in after-tax income represents a 37 percent increase over the result from a regular savings account.

The gain in retirement income increases further for a person whose tax rate declines in retirement. For example, if the tax rate in the second example declines to 15 percent at retirement, the after-tax distribution from the 401(k) arrangement rises to $2,696. The $1,028 gain is 62 percent more than the amount yielded by a regular savings account. 9/

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7. The after-tax interest rate is calculated as (1-T)r where r is the interest rate paid on the deposit and T is the marginal tax rate on the interest. When the market rate is 8 percent and the tax rate is 0.15, the after-tax rate is 6.80.

8. A 401(k) plan is one form of a qualified salary reduction arrangement. All salary reduction arrangements allow employees to reduce their salaries by a chosen amount and have that amount placed in a qualified plan. The most common salary reduction arrangements are 401(k) plans in the for-profit sector and 403(b) tax-sheltered annuities in the nonprofit sector. See Chapter II for further discussion.

9. The calculations in this section are extended in Chapter III to plausible lifetime patterns of contributions for a cross-section of the U.S. population. The results there provide a more realistic estimate of the potential retirement income gain from the tax advantages.

The potential size of the tax advantage is illustrated in this section by assuming that the employee allocates the same amount of earnings ($1,000) to retirement saving in a qualified account as he or she would to a regular savings account. In reality, people could allocate more or less to saving when it is in a qualified plan than when it is not. If more was allocated, working-year consumption would be reduced and the change in retirement income would be greater than in the examples. If less was saved, employees would be using some of the tax advantage to raise consumption before retirement. Likely responses to qualified saving are examined in Chapter IV.

The retirement income gains in these examples equal those that would occur if the contribution to the 401(k) arrangement were taxed at the time contributed and then the after-tax remainder were allowed to earn interest tax free. Thus, the gain of $1,028 in the last example is the same as would occur if the $1,000 of wages contributed to the 401(k) arrangement had been taxed at the 15 percent retirement tax rate, leaving $850 in the account, and then had earned 8 percent interest tax free for 15 years. In the earlier examples, where the individual's tax rates in retirement and in the working years are equal, the results are the same as if the after-tax deposits in the regular savings account had earned an 8 percent tax-free rate of return instead of their respective after-tax rates of return.

Most people will be covered by the tax rates in one of the above examples once the Tax Reform Act of 1986 is fully implemented. According to the projections in Table 2, about 80 percent of pension recipients and workers will pay either the 15 percent or 28 percent tax rate. The main exceptions are the 19 percent of workers and 11 percent of pension recipients with incomes too low to pay any income tax. [10] Workers who do not pay income taxes derive no gains from the income tax advantages of qualified plans; they also are less likely to be participants in qualified plans. Pension recipients not paying any taxes in retirement nonetheless have gained from their qualified plans if they typically paid taxes in their working years. Table 1 includes an example of such an individual, assuming that he or she paid a 15 percent rate while working. How many taxpayers will pay lower rates in their retirement years compared with their working years cannot be determined, but the wider brackets in the new law suggest that fewer will do so than previously.

The Tax Reform Act of 1986 will greatly reduce the advantage of saving in qualified plans for people paying the highest tax rates. Consider someone who under prior law paid a 50 percent tax rate while working and in retirement. Under the assumptions used in Table 1, $1,000 of savings in a 401(k) arrangement yields $1,586 in retirement, compared with only $900 in an ordinary savings account, for a retirement income gain of $686 or 76 percent. Assuming that after 1988 the same person is in the 28 percent tax bracket before and after retirement, the net gain will drop to $616 or just 37. percent. In contrast, tax reform will have a much smaller effect on the average taxpayer. Tax reform is projected to reduce the average marginal tax rate from 27 percent to 22 percent, which in the above examples reduces the gain from 35 percent to 28 percent. The effects of tax reform on people paying high and average rates are contrasted in Figure 1.

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[10] Because pension recipients have relatively high incomes in retirement--compared not only to retirees without pensions, but also to all workers--fewer of them pay no income taxes than is the case among workers.

As noted, after-tax contributions to qualified plans and nondeductible IRAs are less advantaged. If, for example, an after-tax amount of $850 is deposited in a qualified thrift plan, $2,419 will remain after the investment income component is taxed at the time of withdrawal, assuming a 15 percent tax rate in retirement. This is a gain of 6 percent over a regular savings account compared with the 18 percent gain of a 401(k) plan. If an after-tax amount of $720 is deposited in the thrift plan, $1,846 or $2,049 will remain after the investment income component is taxed at the time of withdrawal, depending on whether the taxpayer is in the 28 percent or the 15 percent tax bracket, respectively, in retirement. In the higher retirement tax bracket, the thrift withdrawal is 11 percent above that in a regular savings account compared with a 37 percent gain in a 401(k) plan; in the lower retirement tax bracket, the thrift's gain is 23 percent compared with 62 percent in a 401(k) plan. (Table 1 summarizes these examples under the heading "thrift plan.")

TABLE 2. PROJECTED TAX RATES ON WORKERS AND PENSIONERS IN 1988 UNDER THE TAX REFORM ACT OF 1986

	Percentage Distribution of Taxpayers	
Tax Rate Brackets a/	With Wages	With Pensions
0	18.5	10.9
15	55.4	59.4
Lower 28	23.1	24.5
33	2.5	4.3
Upper 28	0.4	0.7
Minimum Tax	0.2	0.1

SOURCE: Congressional Budget Office tabulations.

a. A 5 percent surtax is added to the 28 percent basic tax rate for adjusted gross incomes within specified ranges. This raises the combined tax rate to 33 percent for this interval. The surtax and specified ranges are set to recapture the advantage of the 15 percent rate and the personal exemption from taxpayers with incomes above the specified ranges. For married couples filing joint returns and claiming four exemptions in 1988, the recapture range is $71,900 to $192,930 of adjusted gross income. See footnote 8 in Chapter V for more details about the 1988 tax structure.

The 401(k) examples equally apply to employer contributions to qualified plans. To provide retirement income to employees without tax advantages, the employer would have either to pay the $1,000 as wages to the employee, who would place it in a regular savings account, or to save it for the employee in a taxable account as a (nonqualified) deferred compensation plan. As compared with the first alternative (the contribution being paid as wages and saved in a regular savings account), the advantages for an employer contribution to a qualified plan are exactly the same as those shown in the 401(k) examples. In the second alternative, where the contribution would be saved by the firm to fund a nonqualified deferred compensation promise to the employee, an additional difference is that the contribution and subsequent years' investment income would be taxed at the firm's corporate rate instead of the employee's personal rate.

One important difference exists, however, between employer contributions to qualified plans and wages deposited in a 401(k) or other salary reduction arrangement. Employer contributions to qualified plans are not subject to the Social Security payroll tax, but wages used for salary reduc-

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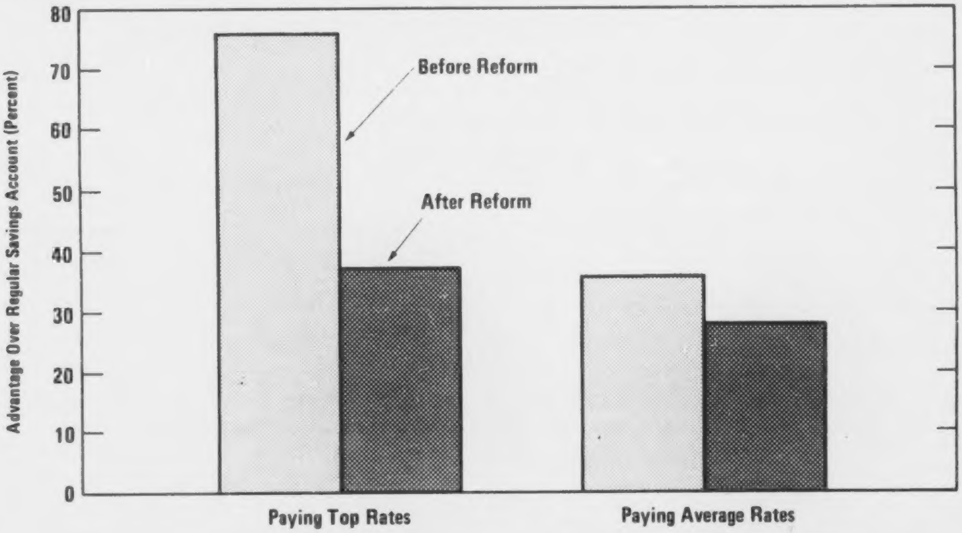
Figure 1.

Effects of the Tax Reform Act of 1986 on the Tax Advantages of People in Qualified Retirement Plans Who Pay Top Income Tax Rates and of Those Who Pay Average Rates



tion deposits (or placed into IRAs) are taxable under Social Security and eventually enter into benefit calculations in that program.

PUBLIC PURPOSES OF TAX ADVANTAGES FOR QUALIFIED PLANS

The favorable tax treatment enjoyed by qualified plans is a way of achieving several ends of social policy.

Higher Retirement Incomes

Qualified plans, it is often said, are a complement to Social Security in helping workers achieve socially desired levels of retirement income. As a compulsory retirement system, Social Security helps most workers to retire at reasonable standards of living. The tax advantages associated with qualified plans further assist some workers in achieving that objective in several ways. Most directly, the tax advantages raise the return on a given amount of retirement savings, as shown in the examples outlined earlier. Second, because coverage of most of an employer's workers in a qualified plan is a condition of qualification, such plans may increase the retirement income for some workers who otherwise would not have made provision on their own. 11/ Finally, under some circumstances, the higher return on qualified savings plans may induce some workers to save more for retirement than they would have otherwise, thus further increasing retirement incomes. This point is discussed more fully below.

Social Security favors lower-income workers, who receive benefits that are relatively high in proportion to their earnings. In contrast to Social Security, the tax advantages enjoyed by qualified plans accrue primarily to middle- and higher-income people. One can argue that without these tax advantages, upper- and middle-income workers might be less inclined to support the redistributional formula in Social Security than they are now. By the same token, without the redistribution formula in Social Security, there might be pressure to regulate qualified plans even more than now in order to achieve larger benefits for those at the lower end of the income distribution.

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11. As discussed in Chapter IV, such increases in retirement income probably represent both some forced saving by those who would not otherwise have saved and a diversion of the tax advantages from higher-income to lower-income workers.

Many argue, however, that middle- and especially higher-income people do not need the tax advantages of qualified plans since they would have sufficient retirement income without them. Furthermore, many qualified plans as they are now constituted favor long-service workers as against those who change jobs or whose employers never sponsor plans or terminate their plans. These coverage and job tenure disparities in qualified plans exist at all income levels, but are greatest in the lower portions of the income distribution. Chapter III presents quantitative evidence bearing on this issue.

More Incentive to Save

Because an income tax, by definition, taxes interest and other investment income, it does not allow people to set aside money that will earn interest at full market rates. An income tax also means that an extra hour of work in the present cannot be translated into an equivalent value of leisure in the future. Many argue, therefore, that an unmodified income tax distorts people's choices in favor of immediate consumption and less savings, and that it results in longer working lives. This pattern of consumption and saving, it is argued, is less than optimal for individuals and deprives the nation of needed savings for investment by business. In its most general form, this is an argument to exempt all savings from current income taxation. 12/

In a more limited context, it is asserted that saving for retirement is so important both to individuals and to society that the income tax must have exceptions, such as those that now exist, to its normal rules--for that purpose, if no other. For some people, especially at lower income levels, retirement may seem a long way off, the necessary savings difficult to

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12. An additional argument for a full-scale consumption tax is normative. Some proponents of this view argue that, regardless of the actual effects on behavior of one type of tax system or the other, the government simply should not place penalties on the attempts by workers to arrange their lifetime consumption and work patterns as they see fit.

Further discussion of consumption and income taxes can be found in Department of the Treasury, *Blueprints for Basic Tax Reform*(January 17, 1977); Institute for Fiscal Studies, *The Structure and Reform of Direct Taxation*, Report of Committee Chaired by Professor J.E. Meade (London: Allen and Unwin, 1978); Congressional Budget Office, *Revising the Individual Income Tax*(July 1983), pp. 109-130, and in references cited therein.

calculate, and current needs more pressing. These considerations argue for policies that encourage, even force, people to save more for retirement. [13]

On the other hand, the tax advantages in qualified retirement plans narrow the federal government's tax base. To raise necessary revenues, the government may have to tax other income at higher rates. This course of action would be especially disadvantageous to taxpayers not participating in qualified plans and not saving in IRAs.

Chapter IV analyzes the problem of incentives at greater length, showing how the tax advantages both encourage and discourage increased saving, the extent to which forced saving may occur, and how the costs of pension saving may be allocated among fellow employees.

Simplicity in Tax Administration

Another argument for the current tax treatment of qualified plans stems from the complexity of trying to assign pension fund contributions and investment earnings annually to individual taxpayers for purposes of taxation. The benefits a person will receive from a qualified plan often are unclear until they are paid out. Some employees leave before vesting, and hence lose the employer's contribution; others leave before they have built up substantial value in their pensions; and others die before claiming any benefit. Further, it is difficult to tax workers on income they do not receive as cash in hand and, therefore, cannot use to pay the tax. By contrast, taxing the benefits is simple. The recipients and their benefits can be clearly identified, and taxes are paid only as benefits are received. Because this treatment is also very favorable, a whole complex of laws and regulations has evolved to prevent its abuse.

Simplicity might arguably be achieved without conferring such large tax advantages. Contributions to pension trusts or plan accounts could be taxed at a uniform rate at the time of deposit--either at the tax rate of the contributing employer or individual, or at a tax rate that approximates the marginal tax rates of all the workers benefiting under the plan. The invest-

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13. By themselves, the tax advantages afforded qualified plans might encourage some workers to save more voluntarily for their retirement and to work more in their prime working years than they might otherwise. Under current law, however, these tax advantages primarily are available only through participation in employer-sponsored pensions. Because of the uniform and collective nature of such plans, some individuals may be forced to save more than they would voluntarily and some of the costs associated with retirement savings may be redistributed from higher-income to lower-income workers. Chapter IV discusses this further.

ment income of the trusts and accounts could also be taxed at a uniform rate, such as the employer's rate, a blended rate attributable to the workers, or the rates normally applicable to taxable trusts. Distributions would become nontaxable. [14] A major drawback to these hypothetical treatments is that at any of these rates some, and probably most, workers would be taxed at a higher rate than on their other compensation and investment income. (A few higher-income workers would likely be taxed at a lower rate.) A partial movement in this direction might be feasible, however, if the investment earnings of pension trusts and plan accounts were taxed annually at a uniform special rate that was relatively low. This approach would continue taxation of contributions at each participant's tax rate in retirement, but would tax the investment earnings at a more uniform rate. Chapter VI considers this option in greater detail.

EFFECTS OF TAX ADVANTAGES ON REVENUES

The increases in retirement income accruing from qualified plans (plus increases, if any, in retirement savings) are not without their costs. By definition, such increases in retirement income are also reductions in revenue that might have been used for other purposes--for example, to lower tax rates, increase Social Security benefits, expand defense or foreign aid programs, or reduce the federal deficit. In this section, the revenue effects are examined in terms of the lifetime revenue losses associated with an individual plan participant, and the annual cash-flow loss to the federal budget.

Lifetime Revenue Losses

Losses in revenues occur during a taxpayer's working years as contributions are made to qualified plans and as the plans earn investment income. These losses, however, are partially offset from taxes paid after retirement as distributions are made and taxed. The present value of taxes paid in retirement averages between 30 percent and 60 percent of the taxes tha would have been paid in the working years. 15/

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[14] An alternative method of taxation would be to use actuarial calculations to measure the value of annual benefits accruing to each employee participating in a plan. The calculated amounts would then be included on W-2 forms along with taxable wages. The calculations could include appropriate discounts for the probability of vesting, leaving, or dying before receiving benefits. Drawbacks to this method are that these calculations would not be clear to many employees, and that the employees would be paying tax on income that they cannot control.

Annual Revenue Loss

From the standpoint of the federal budgeting process, the annual revenue loss is more relevant than the net lifetime loss. The federal budget uses cash accounting, which includes only current year tax revenues. Consequently, the annual revenue loss, ignoring future tax liabilities, is used for qualified plans and IRAs in federal budgeting. Annual loss is calculated by both the Treasury Department and the Joint Committee on Taxation (JCT) in making up their annual lists of tax expenditures. These measures are computed first by adding the taxes forgone on current year contributions (as if they had instead been paid as wages) to the taxes forgone on interest or other investment income earned by qualified pension trusts or in other qualified accounts. From this sum one subtracts the taxes paid on pension annuities and on lump-sum disbursements from qualified accounts. The JCT projects the tax expenditure for pensions and other employer plans in 1988 to be $49.3 billion, with another $8.5 billion from IRAs (see Table 3). 16/ By this measure, the tax expenditures for qualified plans and IRAs constitute the largest exception to the individual income tax.

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15. Examples constructed at CBO, which use a variety of funding rates and contribution periods, find that the present value of taxes repaid ranges between 30 percent and 50 percent for typical cases. A simulation study that calculated the payback found 60 percent repaid in present value. See Sophie M. Korczyk, *Retirement Incomes and Tax Policy* (Washington, D.C.: Employee Benefits Research Institute), pp. 56-57.

16. The current tax expenditure estimates may overestimate the revenue loss because they assume that all of the asset income of qualified plans would become taxable in the absence of the current tax advantages. The amount of taxable asset income would likely be less, for several reasons. First, income no longer going to qualified plans would be taxable, so deposits from after-tax incomes would probably be smaller than those in qualified plans. Second, because those deposits would be taxable, they would accumulate more slowly and therefore earn less and less income in succeeding years. Finally, some of the contibutions diverted from qualified plans would go into other tax-favored investments, such as deferred annuities and homes, whose yield is not taxed annually.

The Tax Reform Act of 1986 reduced the annual loss from qualified plans and IRAs. According to JCT estimates before and after tax reform, the legislation reduced the revenue loss from employer plans by $17.6 billion. Only about $4 billion of this reduction is attributable to provisions restricting qualified plans, primarily the limit on elective deferrals in salary reduction agreements and repeal of the three-year recovery rule for after-tax employee contributions. The remaining reduction in the revenue loss from qualified plans simply reflects the act's reduction in tax rates. Lower tax rates mean that less revenue is lost from any untaxed income. Tax reform also reduced the revenue loss from IRAs by $9.2 billion. Over $5 billion of this is the result of restricted eligibility for IRA contributions; the remainder results from lower tax rates.

The annual revenue loss from qualified plans and IRAs will resume its long-term upward trend after the step down caused by tax reform. The projections of the Joint Committee on Taxation in Table 3 show the trend to be upward over at least the next five years. In the longer run, the trend will be governed by the number of participating employees relative to the number of retirees, by the rate of real growth in incomes, and by the prevalence of qualified plans. Because large population cohorts born between 1946 and 1962 (the so-called baby boom generation) are now in their working years, many more taxpayers are contributing to, and accruing investment earnings in, qualified plans than are receiving distributions from them. Until they retire in the next century, then, the sources of revenue loss will outweigh those of revenue gain. As they retire, however, the elderly population will grow relative to the working population, and this

TABLE 3. PROJECTION OF REVENUE LOSSES FROM QUALIFIED PLANS (In billions of dollars)

	1988	1989	1990	1991	1992
Employer Plans	49.3	51.7	56.5	61.8	67.5
IRAs	8.5	8.4	8.9	9.3	10.3

SOURCE: U.S. Congress, Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 1988-1992* (JCS-3-87), February 27, 1987.

shift will tend to reduce the size of the annual revenue loss from qualified retirement plans.

The annual revenue loss also depends on the amount of contributions and investment earnings per worker compared to the benefits per retiree. Because real income growth raises current contributions relative to current benefits (the benefits being based on past wages), it tends to keep the net revenue losses from qualified plans on an upward slope. Any liberalization in plan accrual rates or contribution limits would have the same effect.

CHAPTER II

EMPLOYER PLANS AND IRAS

Tax advantages for retirement saving are available through IRAs and a variety of qualified employer plans. This chapter describes how the main types of plans work, and compares the incentives and risks inherent in them. The chapter begins with a short history of pensions and pension legislation.

EVOLUTION OF THE PENSION SYSTEM

Formal pension plans in the United States began well before the enactment of special tax provisions for them. 1/ They emerged in the last quarter of the 19th century as a response to fundamental social changes-- increasingly fragmented family structures in an urbanized and industrial society, longer life spans, and the rise of large corporations that needed socially acceptable ways to terminate older workers. By 1929, about 15 percent of private employees were covered by employer plans, concentrated in large corporations and in sectors where government oversight tended to be the strongest.

The Revenue Acts of 1921, 1926, and 1928 initiated the tax advantages for employer plans. The 1921 act allowed employers to deduct current-service contributions to profit-sharing and stock-bonus plans, while allowing employees to delay recognition of any income from those plans until it was paid. Investment earnings of these plans were also exempted from current taxation. The 1926 act extended these advantages to pensions, and the 1928 act allowed contributions for past, as well as current, service to be deducted by sponsoring employers.

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1. Further details on the evolution of pensions and pension legislation will be found in Appendix A.

The Depression and War Years

Enactment of these provisions had little impact on the development of employer provisions in those years. Low tax rates held down the value of the provisions. Moreover, they were barely in place when the Great Depression reversed the evolution. Many employers terminated their pensions, and frequently did not pay benefits already promised to workers.

In 1935 the federal government established the Railroad Retirement system to enable the depleted pension funds for railway workers to meet their obligations. In the same year, the first Social Security legislation was enacted, initially covering only portions of the labor force. Symptomatic of the general decline of employer-sponsored plans was the nearly total absence of any mention of them in the Report of the Committee on Economic Security in 1935. That report proposed a system of federally sponsored voluntary annuities that would be available to those not covered in the compulsory annuity system for industrial workers (in today's terms, Social Security), but also could supplement the compulsory annuities of those who were covered.

By the late 1930s, however, pensions had revived enough to generate concern that they not be used primarily as tax avoidance schemes for the wealthy. The Revenue Act of 1938 made pension and profit-sharing trusts irrevocable, and in the Revenue Act of 1942, the Congress began the process of placing conditions on tax qualification of employer-sponsored plans. The 1942 act introduced the concepts of nondiscriminatory coverage and nondiscrimination in benefits and contributions, provisions which form the core of today's regulation of pensions. During World War II, pensions became a desirable form of compensation because of the very high wartime tax rates and the exemption from wage controls of contributions to pensions. After the war, pensions continued to spread because tax rates remained high, Social Security benefits had been eroded by wartime inflation, and labor unions won legislative and judicial victories making pensions subject to collective bargaining.

Recent Developments

In more recent years, changes have been made in the tax code and Social Security to distribute retirement income according to increasingly refined standards of adequacy and fairness. Specially restricted "Keogh" plans were enacted in 1962 for the self-employed and other noncorporate employers.

The Employee Retirement Income Security Act of 1974 (ERISA) considerably tightened qualification rules for employer plans. ERISA gave the federal government authority to prescribe a uniform meaning for plan rules, and legislated minimum standards for participation, vesting, benefit accrual, and funding.

Between 1974 and 1986, the Congress pursued two different lines of policy. On the one hand, it opened access to the tax advantages of qualified plans in ways that emphasize individual decisionmaking. With ERISA it created IRAs, but only for people not covered by a qualified pension plan. The 1981 Economic Recovery Tax Act extended IRAs to all taxpayers regardless of their coverage under a qualified plan. (It also allowed voluntary employee contributions to qualified employer plans subject to IRA limits.) The 1978 Revenue Act sanctioned salary reduction arrangements in profit-sharing plans--"401(k)s"--and in the state and local government sector (Section 457). Similarly flexible arrangements had already been possible in the nonprofit sector under Section 403(b) of the Code. Then, in the Federal Employees Retirement System Act of 1986, the Congress extended salary reduction saving opportunities to all federal civilian employees. Although subject to special nondiscrimination rules, so-called salary reduction agreements are like IRAs in their emphasis on individual decisionmaking.

On the other hand, pension practices were further constrained by changes that emphasize the collective or forced savings aspects of pensions. Examples are the expanded coverage requirements in the Retirement Equity Act of 1984 and the top-heavy plan rules in the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA). TEFRA also eliminated the differences between qualified plans maintained by corporate and noncorporate employers.

The Tax Reform Act of 1986 reversed the trend toward individual access to qualified saving, while continuing the trend toward stricter conditions on sharing pension benefits among a firm's employees. Individual access is limited by phasing out at higher incomes the deduction for IRA contributions among people who are covered by a pension themselves or have a covered spouse. Individual access to qualified saving is further limited by reducing the maximum salary reduction in 401(k) plans to $7,000 instead of $30,000 as under prior law.

The trend toward stricter sharing of benefits among a firm's employees is extended in the act primarily through stricter requirements for inclusion of employees, faster vesting of benefits, and smaller offsets of plan benefits because of Social Security. Separately, the reduction of tax rates in the act has the effect of reducing the gain from the tax advantages, as discussed above in Chapter I. Further details of the Tax Reform Act of 1986 appear in Appendix B. An assessment of the act's potential effects appears in Chapter V.

HOW EMPLOYER PLANS WORK

Most employer plans are relatively small. Of the 729,000 private employer qualified plans that existed in 1982 (excluding Keogh plans), 94 percent had fewer than 100 participants. However, the 6 percent of plans with 100 or more participants had 88 percent of all participants (see Table 4).

Employer plans can be classified as either defined benefit or defined contribution plans. A defined benefit plan guarantees a specific benefit in retirement, leaving the employer to accumulate sufficient funds to pay the pension. Defined contribution plans specify how much will be contributed annually and leave the payment amount to the fate of the investment experience. Defined contribution plans that are designed specifically to be retirement pensions are usually called money-purchase pensions. Thrift, profit-sharing, stock-bonus, and salary reduction plans are also types of defined contribution plans; some of these plans are not just for retirement savings, however.

TABLE 4. DISTRIBUTION OF PLANS AND PARTICIPANTS BY SIZE OF PLAN, 1982 (In percent)

Participants Per Plan	Number of Plans	Number of Participants
Total	100	100
0 - 99	94	12
100 or more	6	88

SOURCE: Richard Ippolito and Walter Kolodrubetz, eds., *The Handbook of Pension Statistics 1985* (Chicago: Commerce Clearing House, Inc.), 1986, pp. 63-64.

TABLE 5. DISTRIBUTION OF PLANS BY SIZE AND TYPE, 1982 (In percent)

Participants Per Plan	Total	Defined Benefit	Defined Contribution
Total	100	30	70
0 - 99	100	28	72
100 or more	100	60	40

SOURCE: Richard Ippolito and Walter Kolodrubetz, eds., *The Handbook of Pension Statistics 1985* (Chicago: Commerce Clearing House, Inc.), 1986, pp. 63-64.

Most qualified plans are of the defined contribution type, but large plans are more often of the defined benefit type. Thus, while 70 percent of all private plans in 1982 were defined contribution plans, nearly the reverse was true for large plans: 60 percent of private plans with over 100 participants were defined benefit plans (Table 5). In sum, most private plans are small defined contribution plans, but most of the participants in private plans are in large defined benefit plans.

The concentration of employees in large defined benefit plans is more pronounced in the public sector. The 9 percent of federal, state, and local plans with more than 500 participating employees covered 98 percent of all public employees participating in pension plans in 1979. 2/ Almost all of these large plans are defined benefit plans. 3/

The number of participants in private defined contribution plans has been growing more rapidly than the number in private defined benefit plans. Between 1975 and 1982, the number of participants in defined contribution plans more than doubled, to 23 million, while the number in defined benefit

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2. Laurence J. Kotlikoff and Daniel E. Smith, *Pensions in the American Economy* (University of Chicago Press, 1983), pp. 28, 352.

3. *Ibid.*, pp. 361-362.

plans increased only a tenth, to 30 million. 4/ Because the number of private defined benefit plans grew almost as fast as the number of defined contribution plans over the seven years, the greater increase in coverage of defined contribution plans represents the faster spread of these plans among large employers. The more rapid growth of defined contribution participants comes both from the addition of supplementary plans by employers already having defined benefit plans, and from employers choosing defined contribution instead of defined benefit plans for the basic pension.

Defined Benefit Plans

Important features of defined benefit plans are: how their benefits are determined; the extent to which they are integrated with Social Security; and their provisions for vesting, age of retirement, and funding.

Benefits. A relatively simple defined benefit plan provides a fixed benefit per year of service. Such a plan in 1982 might have provided $200 per year for every year an employee worked. A worker retiring after 30 years would collect $6,000 per year. Sometimes the dollar amount credited rises in a few discrete steps depending on earnings. Thus, $180 could be credited per year of earnings below $20,000 and $210 per year of earnings above $20,000. Plans in which benefits depend mainly on length of service represented one-third of all defined benefit plans in the annual Bureau of Labor Statistics survey of medium-to-large private plans. 5/ These plans are most common among unionized production employees--for example, in the auto industry.

The other two-thirds of private, medium-to-large defined benefit plans, and almost all public employee plans, base pensions on earnings as well as on length of service. These plans pay a fraction of the employee's average annual salary, the fraction increasing with length of service. In private plans, the salary is most commonly averaged over the last five years of service, or over the highest five out of the last ten years. In public sector plans, the last three years are usually averaged. The fraction paid is 1 percent to 2 percent times the number of years of service, commonly 1.5 percent. This type of pension formula would be written:

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4. Richard Ippolito and Walter Kolodrubetz, eds., *The Handbook of Pension Statistics 1985* (Chicago: Commerce Clearing House, Inc., 1986), p. 80.

5. General Accounting Office, "Features of Non-Federal Retirement Programs" (1984), p. 3. Medium-to-large plans are those with over 100 or 250 participants, depending on the industry of employment.

Pension = 0.015 x (years of service) x (average salary last 5 years)

Under this formula, a person retiring after 30 years of employment would receive 45 percent of average salary in the final years. This fraction is referred to as the replacement rate. If salary in the final years averaged \$20,000, the pension would be \$9,000 per year. 6/

If a person leaves employment under the plan before the plan's retirement age, the benefit is based on years of service and salary to date. The benefit will commence on reaching the plan's normal retirement age. Such people are said to possess vested deferred annuities in contrast to the immediate annuities owed to those who continue in service until they retire from the plan and receive payments immediately.

Integration. In the private sector, most salary-based pensions are reduced to reflect Social Security benefits. This process is called integration. A common reduction at normal retirement is one-half of the primary Social Security benefit, although the fraction is lower for short-term employees. Such an offset added to the above formula would give a pension of:

0.015 x (years of service) x (average salary last 5 years)
- ½ x (Social Security)

If the person in the above example had a \$6,000 primary Social Security benefit, the pension in the integrated plan would fall from \$9,000 to \$6,000. Other integration methods are possible. 7/

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6. Some plans stop raising the replacement rate after a relatively short service length, such as 15 years. Everyone retiring with more years of service receives the same replacement rate. These plans are referred to as flat benefit plans, in contrast to the unit credit plans described above.

   Other pension plans include an alternative benefit formula to insure a minimum benefit for low-wage or short-term employees. Such a formula might provide \$120 per year of service. If a 30-year employee's final average earnings were under \$8,000, the employee would do better under the alternative formula, which would provide a benefit of \$3,600 (\$120 x 30).

7. It is called an offset plan because a fraction of Social Security directly offsets the pension. Pensions are also integrated by lowering the fraction of the salary replaced below a specified income limit, called the integration level. For example, the fraction of salary replaced per year of service in the above formula might be reduced from 1½ percent to 1 percent for income below the integration level. This is step-rate integration.

Integration allows private plans to offset some of the tilt in the Social Security benefit formula, which replaces a higher share of earnings for lower-wage workers. When the employer's plan is integrated, the tilt in Social Security causes an offsetting tilt in the employer plan so that higher-wage workers receive higher replacement rates from the integrated plan. In most integrated plans, the lowest-wage workers receive some pension beyond Social Security, and the tilt of the Social Security benefit formula is only partially offset for higher-wage workers. 8/ The extent of integration is restricted by one of the conditions for qualification under the Internal Revenue Code (discussed in Appendix B). The Tax Reform Act of 1986 tightened the rules on permissible integration.

Without integration, some long-service, low-wage workers could receive combined Social Security and employer plan pensions that would come close to or exceed their earnings before retirement. This would be a disincentive to continue working. Under integration, however, most of the pension payments of private plans go to higher-wage workers. Of course, these are the workers to whom the tax advantage matters, but they are also those best able to provide for themselves without tax advantages.

Public employers generally do not integrate their pensions with Social Security. The reason may be that historically the federal government and many states and localities chose not to participate in Social Security. Even though participation at the state and local level is now common, most pensions are not integrated with Social Security. Of 43 states where employees participate in Social Security, 37 percent do not integrate their

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8. Replacement rates for two hypothetical employees are reported here to illustrate the effects of integration. The two employees retire in January 1985 at age 65, with 30 years of service credited under the above offset formula. One has worked full time at the minimum wage, averaging $6,864 over the last five years; the other has consistently earned the Social Security maximum wage, averaging $32,300 in the last five years. For the minimum-wage worker, Social Security's basic benefit of $4,437 replaces 65 percent of average earnings over the last five years. The pension formula before offset would replace 45 percent of earnings but after the offset replaces only 13 percent of earnings. The combined replacement rate without integration would be 110 percent; with the offset it drops to 77 percent. For the worker earning the Social Security maximum, the Social Security replacement rate is only 27 percent. This worker's pension after the offset replaces 32 percent compared to 13 percent for the minimum-wage worker. The worker at the earnings limit, however, has a combined replacement rate of only 58 percent compared with 77 percent for the minimum-wage worker. Thus private plan integration, by replacing a higher proportion of benefits for higher-wage workers, offsets some of the progressivity in Social Security benefits.

pensions. 9/ Federal employees hired before 1984 are not covered by Social Security. Later hirees are covered but their newly enacted pension system is not explicitly integrated with Social Security.

Vesting. The term "vesting" refers to the guarantee of defined pension benefits when a person leaves employment before retirement. Employers usually impose a minimum service requirement before accrued benefits will be guaranteed. Currently, most medium and large private plans have 10-year cliff vesting--that is, a person leaving before 10 years of service loses all benefits accrued to date, and a person leaving after 10 years loses none. Almost 90 percent of the participants in private, medium-to-large, defined benefit plans face 10-year cliff vesting. 10/ Most of the remainder face graded vesting--for example, 50 percent vesting at 5 years and 5 percent more vesting in each of the next 10 years. Vesting times are limited for qualified plans, and 10-year cliff vesting is one of the limits.

Private employers will have to shorten their vesting periods starting in 1989. The Tax Reform Act of 1986 reduces the longest vesting periods for qualified plans to either five-year cliff vesting or graded vesting beginning after the third year and finishing after the seventh year.

Vesting for public employees tends to be more rapid and is rarely graded. All federal workers and almost half of state employees face five-year cliff vesting in their basic pensions. Most other state employees and local government employees vest in 6 to 10 years. 11/

Retirement Age. Defined benefit plans need to specify either an age at which the promised benefits are payable or a minimum service requirement, or both. In private plans, normal retirement ages of 62 or 65 years of age are most common, and earlier retirement with 30 years of service is not uncommon. 12/ In public employer plans, the normal retirement age is more likely to be 60 rather than 62 or 65, and an option to retire after 30 years is also more common than in private plans. 13/

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9. General Accounting Office, "Features," p. 6.

10. *Ibid.*, p. 5.

11. Kotlikoff and Smith, pp. 359-360.

12. General Accounting Office, "Features," pp. 10-11.

13. Kotlikoff and Smith, p. 365.

Nearly all pension plans permit early retirement with reduced benefits. Age 55 is the most common age. 14/ Most large employers reduce early retirement benefits by less than the actuarial cost of paying benefits over the longer expected retirement, thereby subsidizing early retirement. 15/ A small number of employers supplement early retirement benefits until age 62 or 65 when Social Security benefits become available. Supplementation is usually done by delaying the Social Security offset in integrated benefit formulas. Late retirement is often penalized by providing no increase in benefits, or too small an increase to reflect the additional service and shortened retirement. 16/

Funding. Most private defined benefit plans are funded solely by employer contributions, while most public plans require some employee contributions. Ninety-three percent of employees in medium-to-large pension plans (omitting thrift and related plans) make no direct contributions. On the other hand, the federal government and 47 states require contributions. 17/ Among public employees, contributions may be more common because many originally were not contributing to Social Security. Their pensions were replacing Social Security, in part, and so employee contributions were substitutes for the payroll tax. Contributions by public employees generally cover well below half of plan costs. Employers make up the difference. It is likely that employer contributions are offset to some extent by lower pay to participating employees, as is discussed in Chapter IV.

The total annual contribution to a defined benefit plan normally is based on the cost of paying the currently accruing benefits that current workers are projected to receive as either immediate or deferred annuities. In this way, the benefits are funded as they accrue to the workers. The size of a year's contribution depends both on the projected benefits and on the projected investment return of that year's contributions. The projections are reexamined periodically, and the contributions adjusted when experience diverges from the original assumptions. For example, in recent years high

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14. General Accounting Office, "Features," pp. 11-12.

15. Edward P. Lazear, "Pensions as Severance Pay," in *Financial Aspects of the U.S. Pension System* (University of Chicago Press, 1983), p. 58.

16. Starting in 1989, a qualified plan cannot restrict accruals of older workers unless they have reached the plan's maximum benefit (The Omnibus Budget Reconciliation Act of 1986). The maximum benefit is normally specified in years of service, so the act will mostly help those who join a firm later in their work lives.

17. General Accounting Office, "Features," pp. 7-9.

interest rates and rising stock prices have reduced the calculated costs of future benefits. Employers have responded by reducing contributions and, in some cases, terminating plans to reclaim excess funds. Federal law requires qualified plans to be funded according to one of six actuarial funding methods. The entry-age normal cost method, which assesses costs as a constant percent of payroll, is most commonly used in large plans. The federal government can allow firms in financial difficulty to postpone their annual contributions.

Benefit Insurance. The governmentally established Pension Benefit Guaranty Corporation (PBGC) insures retirement benefits against plan termination. Qualified defined benefit plans are covered, with the exception of governmental plans and a few others. Separate rules apply to single-employer and multiemployer plans (described below). Defined contribution plans are not insured. If a single employer terminates a plan, leaving insufficient funds to pay accrued benefits, the PBGC will pay the basic benefits up to an indexed limit. The limit in 1986 was $1,790 per month, or $21,477 per year. Firms are assessed premiums intended to cover the cost of the insurance.

Defined Contribution Plans

Defined contribution plans include money purchase plans, profit-sharing plans, and stock-bonus plans. Some of these are also thrift or salary reduction plans.

Vesting in a defined contribution plan has to do with the contributed funds and investment earnings, rather than with promised benefits as in a defined benefit plan. It is typically faster and more likely to be graded than in defined benefit plans. Most employees are fully vested in defined contribution plans after five years of service, and if they leave they normally have the choice of a lump-sum payout at that time or of letting their funds remain invested until they retire.

Money Purchase Plans. In the simplest defined contribution plan, the employer contributes a fixed percent of each employee's salary to the pension trust fund. These are called money purchase plans. The fund is invested and accumulates earnings during the employee's working years. At retirement, the employee's share of the fund can be paid to the employee or used to purchase an annuity. Money purchase, as well as other defined contribution plans, can be integrated with Social Security benefits by contributing a higher percentage of salary for earnings above a specified earnings limit. Target benefit plans are money purchase plans in which the contribution is explicitly derived from an actuarial calculation of the cost of a target pension replacement rate. That rate is not guaranteed, however.

Profit-Sharing and Stock-Bonus Plans. These are defined contribution plans that incorporate variable employer contributions and are not necessarily limited to saving for retirement.

Profit-sharing plans tie the size of the employer's contribution to the profitability of the firm. Profit-sharing plans can either make payments to employees as current compensation or they can accumulate contributions in a trust fund. Only the latter--deferred profit-sharing plans--are qualified plans. Deferred profit-sharing plans can be attractive to firms with uncertain profits because contributions can be reduced in years when profits are low. In particular, small firms are likely to use profit-sharing plans as their retirement plans. Regulations require that contributions to deferred profit-sharing plans be held for a minimum of two years, although employers can impose longer holding periods. Plans permitting withdrawals after a few years are clearly not just for retirement saving.

Stock-bonus plans differ from profit-sharing plans in that the employer's contribution is not necessarily related to profits, and the benefits are distributable in company stock. Stock-bonus plans have much the same motivational objectives for employees as do profit-sharing plans.

Thrift and Salary Reduction Plans. The distinguishing feature of these plans is that they let the employee decide how much pay to contribute to the qualified plan. Employee contributions to thrift plans are not deductible, but those made to salary reduction plans are. In salary reduction plans, employees technically elect to defer a portion of their compensation, which is then excluded from current taxable income. As a result, these employee deposits are called "elective deferrals." Tax advantages for salary reduction plans are considerably larger than for thrift plans, as shown in Chapter I.

Thrift plans have long been available; salary reduction plans are more recent. A few employers offered them before the 1970s; in 1974, ERISA halted new salary reduction plans pending further study. Subsequent legislation has specified their use in several settings. The Revenue Act of 1978 added to the Internal Revenue Code section 401(k) to allow such plans in for-profit businesses and section 457 to allow similar (but unfunded) plans for state and local governments. Internal Revenue Code section 403(b) had previously allowed salary reduction plans for educational institutions and nonprofit organizations. Most recently, the Federal Employees' Retirement System Act of 1986 extended salary reduction to all civilian employees of the federal government, and the Tax Reform Act of 1986 extended salary reduction to Simplified Employer Plans (SEPs, discussed below).

Employers have long used thrift plans to allow supplementary saving beyond that provided in their basic defined benefit or money purchase plans. Most salary reduction plans are used in the same way, although a few employers sponsor them as their sole plan. Private employers have tended to operate thrift and 401(k) plans in much the same way. Employee contributions are normally limited to 5 percent to 10 percent of pay. Employers frequently make matching contributions of between 25 percent and 100 percent of the employee contribution, with 50 percent being most common. Employer contributions become the employee's after a vesting period; employee contributions, made from employee wages, vest immediately. One objective of employer matching contributions is to raise contributions from the lower-paid employees sufficiently that the proportion of contributions from the higher paid does not exceed federal limits for qualified plans.

Most thrift and salary reduction plans are forms of profit-sharing plans because the rate at which the employer matches contributions can vary from year to year according to the employer's profitability.

Other Defined Contribution Plans. Employee Stock Ownership Plans (ESOPs) and Simplified Employer Pensions (SEPs) are used by some employers as substitutes for employer plans, discussed previously. ESOPs are benefit plans holding employer stock that can be structured as stock-bonus or money purchase plans. Employee stock ownership is supported as a work incentive and as a means to greater employee participation in the firm. ESOPs also can be attractive capital-raising vehicles for firms.

SEPs combine features of IRAs and pensions. As with IRAs, contributions are made into a personal account for an employee and are fully owned by the employee. As with pensions, the employer establishes the plan and determines the contribution. Also, contributions are subject to the limits for defined contribution plans. Contributions must be proportional to wages for all employees, with the exception of integration with Social Security. SEPs were enacted to encourage small employers to set up plans by reducing the normal administrative requirements.

Multiemployer Plans

Multiemployer plans have evolved in industries where workers necessarily change employers frequently without changing their industry or occupation, as in coal mining, construction, trucking, and the garment trades. Plans of this type are collectively bargained, and more than one employer contributes. Representatives of the union and the employers administer the plan. An employer contributes to the pension fund for each worker for the time that the worker is in the firm's service. A worker accumulates benefits and vesting rights so long as he or she is employed by member firms. Multiemployer plans comprise only 0.4 percent of all plans, but they are large ones, covering 13 percent of all participants in private plans in 1982. 18/ Most are defined benefit plans, but the employer contribution is normally assessed as a fixed amount per employee.

Plans for the Self-Employed and for Unincorporated Business

The unincorporated self-employed were for a long time unable to participate in pension plans because they were not considered employees. In 1962, specially restricted plans for the unincorporated self-employed (and their employees) were enacted. They were known as Keogh plans because of Congressman Keogh's efforts to secure their passage. The plans could be established as defined benefit plans but most were established as money purchase or profit-sharing plans. The Tax Equity and Fiscal Responsibility Act of 1982 eliminated most distinctions between Keogh and corporate employer plans. This was done in part by extending many of the special restrictions on Keogh plans to all "top-heavy" plans--that is, to those in which benefits accrue primarily to key employees. While there are no longer any differences between plans for the self-employed and other employer plans, the term "Keogh plan" survives, particularly with respect to single-person plans.

Requirements for Qualification

Since the Revenue Acts of 1938 and 1942, the tax code has placed substantial conditions on employer pension, profit-sharing, and stock-bonus plans if they are to qualify for the tax advantages. The conditions have two

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18. Ippolito and Kolodrubetz, *Pension Statistics*, pp. 63-64.

basic thrusts. One is to require that plans cover and pay benefits to the rank and file of employees as well as the highly compensated who have the most to gain from the tax advantages. The other is to limit the maximum amount of qualified saving by any one employee.

Requirements for sharing of benefits among the rank and file include limits on how many employees may be excluded from plans, minimum vesting periods, and rules for nondiscrimination in benefits or contributions. The nondiscrimination rules generally require that benefits or contributions not accrue at higher rates among higher-paid employees, with the exception of integration with Social Security. The extent to which an employee's benefits or contributions can be integrated with Social Security is restricted roughly to the employer's share of the payroll tax paid for the employee. More restrictive requirements are imposed on so-called "top-heavy" plans in which over 60 percent of plan benefits accrue to highly compensated employees and employee-owners.

Tax-qualified saving per employee is limited by restrictions on maximum benefits and contributions. Defined benefit plans cannot pay benefits greater than the employee's average salary over the last three years of service or $90,000, whichever is less. The $90,000 limit is reduced for those retiring before age 65. In defined contribution plans, contributions cannot exceed more than 25 percent of salary or $30,000, whichever is less. The defined benefit limit is to be indexed starting in 1988, but the defined contribution limit will not be indexed until it falls to one-fourth of the defined benefit limit, as specified in the Tax Reform Act of 1986. The act also placed additional limits on salary reduction plans. Employees can defer no more than $7,000 of annual pay, except in plans for nonprofit organizations, which can defer $9,500. The $7,000 limit is indexed and the $9,500 limit will be indexed when the $7,000 limit reaches it. Appendix B gives greater detail on the requirements for qualification, including the changes made by the Tax Reform Act of 1986.

HOW IRAs WORK

Any person can contribute to an Individual Retirement Account if he or she has earnings during the tax year of the contribution. An IRA can be held at nearly any financial institution regularly serving individuals, and the investment choices can be those normally offered by the institution. The maximum annual contribution is $2,000 or 100 percent of earnings, whichever is less. Contributions may also be made to the accounts of unemployed spouses, provided that contributions for both spouses do not exceed either $2,250 or 100 percent of the working spouse's income.

Starting with the 1987 tax year, contributions to IRAs will not be tax-deductible for a higher-income employee who participates in an employer pension or whose spouse participates in a pension. The deduction phases out at between $25,000 and $35,000 of adjusted gross income on individual returns and $40,000 and $50,000 of adjusted gross income on joint returns. Nondeductible contributions will still benefit from the deferral of taxation on interest earnings, as described in Chapter I. Withdrawals are subject to normal income taxation and premature withdrawals to an additional tax of 10 percent (as discussed in Chapter V).

COMPARISONS AMONG PLANS

The effects of plans vary considerably according to their provisions. This section focuses first on the differences between defined benefit plans, on the one hand, and money purchase pensions and other traditional defined contribution plans on the other. These pensions and other nonelective plans are then compared to IRAs, salary reduction plans, and thrift plans.

Defined Benefit Plans Compared with Nonelective Defined Contribution Plans

Money purchase plans resemble individual savings accounts except that the deposits are in the form of invariant employer contributions over which any one worker typically has little direct control. Traditional profit-sharing or stock-bonus plans also operate as nonelective savings accounts, except that the amount of employer contributions can vary from year to year. Defined benefit plans are less like individual savings because they specify benefits rather than contributions, and because those benefits accrue in ways that encourage employees who start with a firm to continue until they reach the firm's early-to-normal retirement ages. These features of a defined benefit plan make a person who leaves too soon or stays too long worse off than he or she would be in a money purchase or similar plan. However, the employee who stays until retirement is guaranteed a target replacement rate, while the payments from a money purchase or similar plan depend on the success of the plan's investments.

The incentives in a defined benefit plan may reflect to some degree the needs of employers with complex production processes, as well as the ability of some employers to carry investment risks better than individuals. If the incentives are effective in securing long-term commitments from employees, they may raise productivity and make possible retirement benefits above what long-term employees could otherwise receive under a money purchase or similar plan.

Incentives to Stay. Defined benefit plans encourage long-term employment by tying the pension benefit to final pay. Pay tends to rise with time on the job; the longer a person remains, generally, the greater the value of the service credit earned by each year of service. In contrast, most money purchase plans create no incentive to stay on the job beyond the vesting period since annual contributions depend only on earnings each year and not on length of service.

An example will demonstrate the effect that tying pension benefits to final salary has on pension benefits. Table 6 shows the outcomes for three people who start with the same employer at age 22. The three stay for different lengths of time with the first employer, but all earn the same salary each year they work until they retire at 62. The first employer uses the defined benefit pension formula presented earlier with 10-year cliff vesting but without integration. Employee A leaves the first job after 9 years and works the next 31 years with a second employer who has the same pension plan and pay scale. Employee B works with the first employer 20 years and then switches to the second employer. Employee C works 40 years for the first employer.

The upper half of Table 6 shows the pensions and replacement rates for the three employees, assuming a 3 percent inflation rate. Employee C, who has been with the same employer for 40 years, earns a pension that replaces 60 percent of his or her final pay. Employee A's nine years with the first employer earn him nothing because of the 10-year cliff vesting, but his 31 years with the second employer earn him a replacement rate of 46.5 percent of his final five-year salary average. Employee B, with 20 years at each employer, earns pensions that replace 30 percent of final pay at each job. However, B's final five-year salary average on the first job is much below that of his second job, so the sum of his pensions from the two jobs is well below that of Employee C and it is even below employee A's despite A's loss of vesting. Employee B's replacement rate is only 41.1 percent, showing that the incentive provided by tying the pension to final pay can be even stronger than the vesting incentive.

Tying pension benefits to final pay serves as inflation protection as long as the employee remains at the firm, but it leaves separating employees fully subject to erosion of their deferred annuity pensions. The lower half of Table 6 shows the effect of doubling inflation from 3 percent to 6 percent. The two workers receiving their full pension benefit from their last employer have the same replacement rate as at the lower inflation rate. Employee B, though, finds the pension from his first employer replacing less of his final pay at age 62 because of the greater inflation between quitting the first job and retiring. As a result, Employee B's two pensions together replace only 36.2 percent of final pay at the higher inflation rate.

A change to five-year vesting raises the replacement rate for Employee A very modestly, and highlights the disparity between vested short- and long-tenure workers under a defined benefit plan. With five-year vesting, Employee A earns a pension for his first nine years of work, but it raises his total pension income from 46.5 percent to only 48.9 percent of his final pay, assuming 3 percent inflation. At 6 percent inflation the replacement rate rises to only 47.5 percent. The effect of five-year vesting on the replacement rate is modest because Employee A's pay after his first nine years of work is far below his pay when he retires. 19/ Under five-year vesting, all three employees receive pensions based on 40 years of service, but receive substantially different replacement rates because of their different tenures for a single employer.

Tying pension benefits to final pay creates an incentive to remain with the employer, but the size of this incentive depends heavily on inflation, a factor beyond the control of the employer, rather than on the increase in productivity from longer-term employment.

When a defined benefit plan is terminated, all employees pay the penalty that Employee B paid when he or she left before retirement age. The benefits of all employees under the terminated plan are frozen at current pay levels. Pay and inflation may rise considerably over the rest of the employees' work lives, but those years of service under the terminated plan will never earn higher benefits--just as they did not for Employee B in Table 6. Only if the employer establishes another plan that grants credit for past service can the employees recoup their losses. If the employer estab-

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19. After the first 9 years of work, the five-year average pay is 18 percent of the five-year average after 40 years of work, assuming 3 percent inflation. At 6 percent inflation, the earlier average is 7 percent of the later average.

TABLE 6. EFFECT OF LENGTH OF SERVICE ON DEFINED BENEFIT PENSIONS

	Length of Service (In years)		Pension (In dollars)			Replacement Rate on Final Five-Year Salary Average (percent)
	First Job	Second Job	First Job	Second Job	Total	
3 Percent Inflation						
Employee A	9	31	0	86,000	86,000	46.5
Employee B	20	20	20,500	55,500	76,000	41.1
Employee C	40	0	111,000	0	111,000	60.0
B's Final Five-Year Salary Average at Age 42					68,200	
B's Final Five-Year Salary Average at Age 62					184,900	
6 Percent Inflation						
Employee A	9	31	0	249,600	249,600	46.5
Employee B	20	20	33,500	161,000	194,500	36.2
Employee C	40	0	322,100	0	322,100	60.0
B's Final Five-Year Salary Average at Age 42					111,700	
B's Final Five-Year Salary Average at Age 62					536,800	

SOURCE: CBO computations assume a starting salary of $20,000 at age 20, with annual increases for inflation, productivity gain of 1 percent, and merit increases falling from 5 percent at age 21 to almost zero at age 61. The pension plan pays 1.5 percent per year of service on an average of the last five years of service.

lishes a plan that does not recognize past service, as some have done, or if the employer goes out of business, all employees pay B's penalty. 20/

Money purchase and other nonelective defined contribution plans, on the other hand, impose no cost on vested employees who leave or on any employee if the plan is terminated. As long as the terminating employee leaves accrued funds in the plan, or rolls them over to another tax-advantaged account, they continue to grow from investment returns at the same rate as if the employee had remained on the job. When inflation increases, investment returns generally increase as well, so the accrued funds grow more rapidly and their purchasing power is protected.

Incentives to Retire. Defined benefit plans also have financial incentives encouraging fairly uniform retirement ages. The plans guarantee a pension payment independently of investment performance, and typically adjust those payments so that their expected lifetime value peaks between the ages of early and normal retirement.

Guaranteeing the payment means that employees reaching retirement age will not have any incentive to speed up or delay retirement because the value of their investment portfolio is unexpectedly high or low. In contrast, a person with a money purchase plan might want to alter the timing of retirement depending on the performance of the investments. This apparently was a problem when stock prices fell in the 1970s, creating delays and hardships for retiring employees in firms whose defined contribution plans were invested heavily in stocks. Two major retailers switched to defined benefit retirement plans after this experience.

Defined benefit plans also encourage a fairly uniform retirement age by setting the pension accrual rate so that the expected lifetime value of payments peaks between early and normal retirement. People quitting before early retirement age usually must wait until they reach the plan's normal retirement age before getting any payment, and they suffer the disincentives discussed above from having their pension set in terms of their salary at the time they quit. People retiring between early and normal retirement ages often get a subsidized benefit, and until 1989 people retiring after normal retirement age frequently get no increased benefit even though they have a shorter expected lifespan. (In 1989 and after, bene-

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20. The few employees whose benefits exceed the amounts insured by the PBGC, $21,477 per year in 1986, may face even greater losses if the plan is underfunded; they could lose benefits already accrued.

fits must rise until the plan's maximum benefit is reached.) Under this existing arrangement, the total value of expected lifetime pension payments rises with the age at which an employee quits until early retirement is reached~~, stays steady~~ or declines slightly until normal retirement age, and then drops rapidly for later retirement. 21/ In contrast, the value of assets in a money purchase or similar plan continues to grow until normal retirement because of regular contributions and interest earnings. Even if contributions stop after that age, the account continues to grow from interest earnings until the employee retires.

Why Incentives? The employment incentives of defined benefit plans may have been designed to encourage long-term employment and regular retirement patterns. Long-term employment is clearly advantageous when the costs of hiring and training are high, and employers may also prefer a fairly uniform retirement age so as to avoid the necessity of making evaluations among employees.

On the other hand, the incentive to stay may be an unintended side effect of protecting employee pensions from inflation. Certainly the strength of the incentive depends on the rate of inflation, and that rate is not controlled by the employer. At high rates of inflation, some employers may find the incentive to stay too strong for efficient production. While the incentive to stay may be unintended, the incentive for uniform retirement ages is an intentional feature of defined benefit plans, since it would be costless for funded plans to provide actuarially fair increases in benefits for delayed retirement.

The use of defined benefits instead of defined contributions may also "buy" some firms more employee satisfaction per dollar of pension cost. Large firms, and firms in stable and growing markets, generally have the financial ability to offset short-term swings in the value of the retirement fund. When values fall, they can increase their contributions sufficiently to sustain pension benefits and compensate by reducing funding in years when returns are above normal. Employees near retirement have much less flexibility in offsetting swings in investment returns and therefore probably place a higher value on that guarantee than it costs these employers to provide. Money purchase plans would have to invest in shorter-term and less risky investments to avoid swings in asset values, but these investments would provide a lower return than those available to firms with longer investment horizons.

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21. Lazear, *Pensions as Severance Pay*, pp. 57-58.

Firms with long-term investments in equipment may also find defined benefit plans advantageous in their wage negotiations. Such a plan raises the employees' stake in the firm's future because the value of their pensions will be frozen if the firm goes out of business. This increased stake may help to moderate wage demands.

The foregoing reasons why firms may favor defined benefit plans apply more strongly to larger firms, where the plans predominate. Another reason based explicitly on size is that the fixed administrative costs of defined benefit plans are higher than for money purchase plans. Large firms are able to spread this cost over more employees and make the average cost per employee less prohibitive than for small firms.

Traditional Pensions Compared with Thrift and Salary Reduction Plans and IRAs

Defined benefit, and nonelective money purchase, profit-sharing, and stock-bonus plans are the traditional vehicles through which tax advantages for retirement saving have been available. These plans require almost uniform contribution or benefit accrual rates among individuals. IRAs and salary reduction plans are recent departures that give individuals control over the size of their contributions, while still offering the full tax advantages of traditional plans. Employer thrift plans have long offered employees discretion in the amount saved, but on less favorable terms than salary reduction plans and IRAs.

Uniform or Flexible Contributions. IRAs increase opportunity and flexibility. They increase opportunity by giving all employees the option of contributing independently of what their employers may choose to do. Thrift and salary reduction plans give the employer the option first, and only afterward does the individual have a choice. IRAs also increase flexibility by allowing individuals to choose the amount of their contribution up to the legal limit, although that limit is low compared with contributions permitted in employer-sponsored plans. Thrift and salary reduction plans also provide this option.

Letting individuals determine their own contributions allows them to tailor their retirement saving to their own particular circumstances. It also allows them to adjust their retirement saving over the life cycle, as their family obligations permit. People who want to retire early may choose to save more, while those who prefer later retirement can save less.

The danger is that some people may be shortsighted and not save enough to support themselves in retirement. Social Security partially meets this need, but retirement income from Social Security is not enough to maintain preretirement living standards for many better-paid workers. The federal government has taken an interest in protecting people from the consequences of their own ill-considered actions, as in discouraging smoking or requiring seat belts. Retirement saving, with its long planning horizon, may be another such area. Further, some have argued that a policy of encouraging pensions and other qualified plans reduces the pressure on Social Security and other government programs for the elderly.

One way to allow individual decision making while mitigating the results of shortsighted choices is to add an IRA, salary reduction, or thrift plan to a traditional employer plan. Such a combination insures that all covered employees supplement Social Security to some minimum level while allowing those who want to save more to do so in tax-advantaged accounts. Many employers offer such combinations. While the combinations preserve some benefits of both the traditional employer plan and the newer flexible plan, they also fail to achieve the full benefits of either. The traditional plan limits the ability of participants to adjust saving to their own needs, while the flexible saving add-ons will probably mean lower levels of support in the traditional plans. For example, as salary reduction plans spread rapidly among those covered with traditional plans, they are likely to cause employers to reduce the benefits that the traditional plans provide.

The protection that mandatory pensions provide against inadequate retirement saving is lost on short-term employees. Employees who leave before vesting get no benefit from mandatory pension coverage, and even those who vest in a defined benefit plan before leaving will have their deferred benefit eroded by inflation unless they are near retirement age.

Inclusion in or Exclusion from Social Security. Employer contributions to pension plans are not counted as wages for Social Security purposes. They are not subject to the payroll tax, nor do they count in determining Social Security benefits. On the other hand, wages contributed to IRAs or to thrift and salary reduction plans are treated as Social Security wages. Some employees will gain more by escaping the payroll taxes and forgoing the Social Security benefits; the reverse will hold for others.

When an employer contributes a dollar to a pension plan, the full dollar is invested. When the employer allocates the dollar to wages, the payroll tax must be paid and only the remainder can be invested. As long as the remainder is invested in an IRA or salary reduction plan it will receive the same tax advantages as the employer pension contribution. The main difference is that the amount of the payroll tax earns investment returns in the case of the pension contribution, and it "earns" Social Security benefits when paid as wages.

Whether the payroll tax amount earns more invested in the employer pension than in Social Security benefits depends on a person's work history and pay. Social Security Administration projections show payroll taxes for today's average worker earning about the same return as they would if they were invested in pension funds (assuming that the employer and employee taxes come out of wages). However, large differences can occur for short-term workers and for lower- and higher-paid long-term workers. Short-term workers who fail to vest or who vest but have their benefits severely eroded by inflation can expect a higher return from Social Security contributions than from investing the same amount in a pension. Lower-paid long-service employees are also likely to get a higher return from investing in Social Security because the tilt in the benefit formula gives them a higher return than they could expect from market investments. However, the tilt also means that employees whose wages approach the maximum Social Security wage earn a higher return on a market investment than on contributions to Social Security. Employees earning more than the Social Security maximum wage would be unaffected by a shift from employer pension contributions to employee IRA or salary-reduction contributions because they would pay no payroll tax on shifted compensation.

IRAs Compared With Thrift and Salary Reduction Plans. As noted above, IRAs are available to all employees, although they are deductible only for those without pension coverage for themselves or their spouses. Thrift and salary reduction plans are available only at the discretion of the employer.

Contribution limits are normally stricter for IRAs than for thrift and salary reduction plans. Contributions to IRAs can be 100 percent of earnings but no more than $2,000. Employers commonly allow deferral to salary reduction plans of 5 percent or more of pay, which at low pay levels can be surpassed by IRA contributions. However, people at low pay levels are unlikely to contribute much more than 5 percent of pay to retirement saving unless they receive substantial support from a spouse or a non-wage source. Those earning $40,000 or more can save more through the typical salary reduction plan than through an IRA. Contributions to salary reduction plans are legally limited to $7,000 ($9,500 in plans for nonprofit organizations). In thrift plans, employers commonly allow contributions of 5 percent to 10 percent of pay, and the legal maximum is $30,000.

One reason that public policy generally allows higher contributions to thrift and salary reduction plans may be that these employer plans are subject to nondiscrimination rules. The rules require that contributions by and on behalf of lower-paid employees must not fall too far below contributions for higher-paid employees. Employer matching contributions serve as inducements to attract sufficient saving from the lower-paid to meet the nondiscrimination rules. In this way, salary reduction and thrift plans may induce more saving from lower-paid employees than IRAs do, thus reducing the number who save too little. (Preliminary evidence reported in Chapter III suggests that contributions are higher in salary reduction plans than with IRAs.) But the nondiscrimination rules apply only to groups of employees and not to contributions by or for individuals, who are not required to participate in salary reduction and thrift plans.

Different Plans for Different People

Each method of tax-deferred retirement saving has its own strengths and weaknesses. Preferences among them will vary by worker and employer. In a competitive environment, workers will gravitate toward jobs with pension plans they prefer, and employers will offer plans that attract the kinds of workers they want and that provide the incentives they need for efficient production. Of course, both employees and employers are motivated by many other factors as well.

Workers who wish and expect to remain with an employer until retirement, and who place a greater value on a guaranteed pension replacement rate, will be more likely to end up at firms with defined benefit plans. Likewise, firms wanting to attract a stable work force and encourage uniform retirement ages will tend to offer defined benefit plans. Moreover, because administrative costs are higher and the risks to employers greater with defined benefit plans, small firms will be less likely to offer them.

Workers with unique skills or extensive general training, such as engineers and lawyers, often prefer to be able to shift employers as demands for their skills shift. New, small firms in higher-risk industries may not want the administrative cost or financial risk of guaranteed pension benefits, although their higher-wage employees want the tax advantages of deferred savings. Money purchase, salary reduction, and other defined contribution plans better suit these workers and employers. Consequently, small and high-technology industries generally rely more on defined contribution plans.

Still others, including students, some spouses, and the elderly, are only temporarily in the labor market and are not interested in pension saving. Firms not requiring extensive skills or long on-the-job training can attract these workers without the cost of a benefit plan, as does the retail industry. Workers in this group who want tax-advantaged savings can use their own IRAs.

Market forces of this kind can match a variety of pension plans to the needs of employers and employees better than a single mandatory system could. Some people, however, will be left without retirement benefits other than Social Security, including those who change jobs under defined benefit plans and those who fail to save and are not covered by a mandatory employer plan. IRAs and salary reduction plans can help to fill the gap for those who want to save more than their employers provide, but those who are shortsighted about saving for retirement may fail to make use of them.

CHAPTER III

USE OF THE TAX ADVANTAGES

Participation in pensions has leveled off at a point where about half of the work force is covered at any one time. Those with pensions are most likely to be older, better paid, and working under union contracts. Large employers in government and manufacturing are more likely to provide pensions than small employers in retail trade and services. When IRA deductions were available to all workers, less than 20 percent contributed to them in any one year, and those who did were on the average even older and higher paid than pension participants.

The participation patterns among today's workers suggest that most of today's younger workers will participate in tax-advantaged plans or accounts sometime during their work careers and will receive payments from them in retirement. CBO projects that the tax advantages are likely to raise the retirement incomes of elderly singles by 14 percent on average, and of retired couples by 21 percent on average. These gains will be concentrated on higher-income people and, even more so, on those who work most of their careers in a single plan. The gain from the tax advantages for workers who are covered by one plan for 20 or more years will average 28 percent compared with the gain for shorter-term workers of about 8 percent.

PARTICIPATION AMONG TODAY'S WORKERS

In 1982 and 1983, roughly 57 million people were accruing benefits--that is, participating--in a pension plan.[1] Another 17 million had IRAs and 2

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[1] The precise number is known only roughly by interpolating between two data sources that give widely different numbers. The pension supplement to the Census Bureau's May 1983 Current Population Survey (CPS) indicates that 45.8 million employed people were participating in a pension at the time of the survey. Of this total, 30.0 million worked for private employers. Separately, Department of Labor tabulations of Forms 5500 and 5500C submitted by private-plan administrators for plan years beginning in 1982 suggest about 53.2 million active participants among private-sector plans.

(continued)

million were contributing to 401(k) plans. Proportionately about half of all employees participate in pensions while under 20 percent have an IRA. 2/ Among all employees age 14 and older, 46 percent participate in pensions and 17 percent in IRAs. Among full-time employees, 54 percent participate in pensions and 19 percent in IRAs. The remainder of the discussion in this section focuses on participation among full-time employees, although the patterns apply as well to all employees. 3/ Special attention is paid to the comparative use of pensions and IRAs. One subsection considers the extent of spousal participation, and a final subsection documents recent trends in the use of 401(k) plans.

Pension Participation of Full-Time Employees

Older and higher-income employees participate more than others in pensions, according to the Census Bureau's 1983 Current Population Survey (CPS). Among those under age 25, just over a quarter respond that they par-

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1. (continued)
The 23.2 million discrepancy in private-plan participants arises from the time difference and from inadequacies in each source. Surveys tend to give too low a number because some people do not know if they are participating; 6.8 million employed people did not know according to the 1983 CPS. Furthermore, the survey only included employed people, while recently laid-off individuals normally are still active in their plans. On the other hand, the forms submitted by the plans double-count participants when an employer has more than one plan or a person is covered in more than one job. Analysts at the Department of Labor have estimated that the actual number of people participating in plans of private employers was probably around 37.5 million in 1983. That figure is 25 percent above the level indicated by the CPS. Applying the same percentage adjustment to CPS-reported public-plan participants gives 57.2 million total participants.

2. Participation rates are based on the pension supplement to the Census Bureau's May 1983 CPS, which is is the first detailed pension survey of the general population since the pension supplement to the May 1979 CPS. The 1983 pension supplement was jointly funded by the Department of Health and Human Services and the Employee Benefits Research Institute. Extensive tabulations of this survey have been compiled by Emily F. Andrews, *The Changing Profiles of Pensions in America* (Washington, D.C.: Employee Benefits Research Institute, 1985). Andrews' tabulations use different measures of participation than those reported here.

3. The percentage participating among full-time employees has been used in analyses of the 1972 and 1979 CPS pension supplements. See Walter W. Kolodrubetz and Donald M. Landay, "Coverage and Vesting of Full-Time Employees Under Private Retirement Plans," *Social Security Bulletin*, vol. 36 (November 1973), pp. 20-36; and Daniel J. Beller, "Coverage Patterns of Full-Time Employees Under Private Retirement Plans," *Social Security Bulletin*, vol. 44 (July 1981), pp. 3-11.

TABLE 7. PENSION PARTICIPATION OF FULL-TIME EMPLOYEES, BY AGE GROUP

Age Group	Number of Employees (millions)	Percent Participating	Percent Not Participating	Percent Who Do Not Know
All Employees	74.6	54	40	6
14 - 24	11.8	26	61	13
25 - 34	23.6	52	41	7
35 - 44	17.2	63	32	5
45 - 54	12.4	65	31	4
55 - 64	8.6	66	31	3
65 and over	1.0	39	56	5

SOURCE: Congressional Budget Office tabulation from the May 1983 Current Population Survey of the Bureau of the Census.

ticipate, and another 13 percent do not know their status (Table 7). The percentage participating rises to a plateau of 63 percent to 66 percent for employees age 35 to 64, and the percentage not knowing declines to 3 percent to 5 percent for the same group.

When earnings are taken into account, participation varies to an even greater extent. Within age groups, participation rises sharply from the low- to middle-earnings levels and then stabilizes. Among employees age 25 to 34, 24 percent with earnings below $10,000 report pension participation; the rate rises to 60 percent for those with earnings between $15,000 and $20,000, and levels off near 70 percent for those with incomes above $20,000. Pension participation rises in a similar progression among full-time employees age 45 to 64 (see Table 8). 4/

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4. Two Table 7 age groups--45 to 54 and 55 to 64--are combined to retain narrow ranges of statistical precision when age groups are subdivided among earnings classes. Because the separate age groups have similar pension participation rates and similar distributions by income, little is lost from their combination. The 25 to 34 group, containing a large portion of the "baby boom" generation, is large enough to be subdivided with little loss in statistical precision.

TABLE 8. PENSION PARTICIPATION OF FULL TIME EMPLOYEES, BY AGE AND EARNINGS GROUPS

Earnings Group (thousands of dollars)	Number of Employees (millions)	Percent Partici-pating	Percent Not Partici-pating	Percent Who Do Not Know
All Employees	73.3	54	39	6
		Ages 25-34		
Under 10	3.9	24	63	13
10 - 15	5.8	47	45	8
15 - 20	4.7	60	35	5
20 - 25	3.8	68	28	4
25 - 35	2.8	67	29	4
Over 35	1.0	71	25	4
All	22.0	51	41	7
		Ages 45-64		
Under 10	3.1	34	59	7
10 - 15	4.4	57	38	4
15 - 20	3.6	71	26	3
20 - 25	3.1	80	18	2
25 - 35	2.8	82	16	2
Over 35	2.1	85	13	2
All	19.2	63	30	4

SOURCE: Congressional Budget Office tabulation from the May 1983 Current Population Survey of the Bureau of the Census.

NOTE: Table excludes those not reporting their earnings.

It is not surprising to find that reported pension participation rises both with age and income. Older persons are more likely to consider the availability of a pension in selecting a job and continuing in it. Furthermore, because they change jobs less frequently, they are more likely to have been on a job long enough to participate. Higher-earning employees are also more likely to seek out or bargain for pension benefits. 5/ They are apt to do so because their tax advantages are larger, and because Social Security replaces a smaller share of their earnings. Finally, because older and higher-earning people tend to be more interested in their retirement benefits, they are more likely to be aware of their participation in pension plans.

Participation by Industry. Pension participation also differs by characteristics of employment--by industry, firm size, and union coverage. Among industries, one of the highest participation rates is in the public sector. The 1983 CPS found 81 percent of public sector employees participating in pensions compared with 47 percent for the entire private sector (see Table 9). In the private sector, the publicly regulated communications and utilities industries had the same participation rate as the public sector. Other industries with relatively high participation rates are mining (69 percent) and durable manufacturing (67 percent). Relatively low participation rates are found in retailing (29 percent), construction (32 percent), and services (36 percent).

Pension participation among industries may vary for several reasons, including prominently the size of the firm and the representation of employees by a union contract. Workers at firms with fewer than 100 employees had a participation rate of 32 percent in comparison to a 71

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5. The statement applies more accurately to total family income than to an individual's earnings; however, data presented from the CPS have been tabulated by earnings. One reason is that income from nonearnings sources is seriously underreported in the CPS; and among full-time employees, earnings are highly correlated with total income. Another reason is that an annualized earnings rate can be constructed from normal weekly earnings as of May 1983, whereas total family income is available only for 1982. Ascribing 1982 income to May 1983 employment could have a distorting effect, particularly because of the large number of people who went back to full-time work during the rapid economic recovery in early 1983.

Total family income will be used below to classify IRA contributors because this information is available from tabulations of tax returns. Tax returns are subject to much less underreporting of nonearnings income. Furthermore, total family income is most likely more relevant than earnings in a family's decision to open an IRA. The case is not so clear with a pension, which must be offered by the employer.

percent rate at larger firms (see Table 10). Size is especially important in defined benefit plans because of their high fixed administrative costs and the investment risk of guaranteeing benefits. Large firms also appear to use the incentives of defined benefit plans to encourage employees to remain when young and leave when old. As Chapter II pointed out, large plans are more likely to be defined benefit plans, and most employees are covered by defined benefit plans.

TABLE 9. PENSION PARTICIPATION OF FULL-TIME EMPLOYEES, BY INDUSTRY

Industry	Numbers of Employees (millions)	Percent Partici-pating	Percent Not Partici-pating	Percent Who Do Not Know
All Industries	74.6	54	40	6
Public Sector	13.7	81	15	4
Private Sector	60.9	47	46	7
Agriculture	1.2	8	83	9
Mining	0.9	69	28	3
Construction	4.0	32	61	7
Manufacturing				
Durables	10.8	67	27	6
Nondurables	7.5	59	34	7
Transportation	2.3	53	42	6
Communication and Public Utilities	2.4	81	16	4
Trade				
Wholesale	3.8	47	46	7
Retail	9.4	29	63	9
Finance, Insurance, and Real Estate	4.9	54	40	6
Miscellaneous Services	13.9	36	57	8

SOURCE: Congressional Budget Office tabulation from the May 1983 Current Population Survey of the Bureau of the Census.

NOTE: Table excludes those not reporting their industry.

TABLE 10. PENSION PARTICIPATION OF PRIVATE-SECTOR, FULL-TIME EMPLOYEES, BY UNION CONTRACT STATUS AND NUMBER OF EMPLOYEES PER ESTABLISHMENT

Establishment Group	Number of Employees (millions)	Percent Participating	Percent Not Particpating	Percent Who Do Not Know
		All Employees		
All Establishments	56.8	48	46	7
Fewer Than 100 Employees	34.4	32	61	7
100 or More Employees	22.4	71	23	5
		Employees Under Union Contracts		
All Establishments	11.8	77	17	5
Fewer than 100 Employees	4.7	71	23	6
100 or More Employees	7.1	82	13	5
		Employees Without Contracts		
All Establishments	43.6	40	54	7
Fewer than 100 Employees	28.9	26	67	7
100 or More Employees	14.7	67	28	5

SOURCE: Congressional Budget Office tabulation from the May 1983 Current Population Survey of the Bureau of the Census.

NOTE: Table excludes those not reporting size or union status.

Employee representation by a union contract is especially important at small firms. Among workers at firms with fewer than 100 employees, those covered by a union contract had a participation rate of 71 percent compared with only 26 percent at nonunion firms. Union coverage is associated with higher participation at large firms as well. At large firms the participation rate among union-covered employees was 82 percent compared with 67 percent among those not covered by a union contract.

One explanation for the prevalence of pensions among union employees is that pensions and unions are both manifestations of the long-term employment commitment some firms and workers seek. Where turnover is high, pensions do not make sense, and unionization is difficult. In some cases, workers have a long-term commitment to the industry or trade even though they shift jobs frequently among a number of small firms. Mining and construction are examples in which pensions make sense once the industry has been unionized; then a pension can be based on long-term employment in the industry, as happens with multiemployer plans. Multiemployer plans also achieve the economies of large-scale operation that elude most small employers. The prevalence of pensions among small unionized firms is almost certainly due to multiemployer plans. The prevalence of pensions among unionized workers generally may reflect the role of union bargaining in achieving better wage and benefit compensation. Additionally, union bargaining may be more influenced by long-time members who, because they are older, have greater interest in pensions. Pension increases in defined benefit plans can be especially attractive to older employees because they get the full benefit of the pension increase at retirement without experiencing any concomitant downward pressure on wages during most of their working years.

Trends in Pension Participation. Pension participation of privately employed persons grew rapidly from World War II into the 1960s. It then leveled off during the 1970s and declined slightly from 1979 to 1983. The decline was undoubtedly influenced by lingering effects of the severe 1982 recession. Participation probably has risen slightly since 1983, and the long-term prospects are for no growth to modest growth.

The first CPS pension survey, which was conducted in 1972 and was confined to private-sector employees, found participation of full-time employees had reached 49 percent. The second survey, conducted in 1979, found that private-sector participation had risen only to 50 percent, despite several years of uninterrupted economic expansion. The third survey in 1983 found private-sector participation had declined to 47 percent.

Pensions spread among public employees earlier than among private employees, so the cresting of growth in private plans between 1972 and 1979 probably also occurred in the public sector. The 1979 survey found public-sector pension participation at 84 percent, a figure that probably was close to the 1972 rate as well. Public-sector participation declined by 1983 to 81 percent, about the same decline as experienced for private employees. For all employees, then, pension participation fell from 56.3 percent to 53.7 percent between 1979 and 1983.

The modest change in the private-sector participation rate during the last decade reflects offsetting trends. Pension participation has continued to grow in most industries, but this growth has been offset by the shift of employment to industries with low participation, such as services. For this reason, participation rates in both manufacturing and services have grown between 1972 and 1983 without increasing their combined participation. Participation in services grew exceptionally, from 30 percent to 36 percent. The combined participation rate, however, remained unchanged at 52 percent because employment shifted from manufacturing, where participation was higher to begin with, to services where participation is still lower (see Table 11). 6/

The modest change in the aggregate participation rate since 1972 also masks an increase in participation by women, which in the private sector rose from 37 percent in 1972 to 40 percent in 1979 and to 41 percent in 1983 in spite of the recession (see Table 12). Participation by men in the private sector rose slightly from 1972 to 1979 and then fell in 1983. When public-sector employment is included for 1979 and 1983, the women's participation rate holds constant while the men's falls. The decade-long upswing in women's participation probably reflects the movement of women into better paying and permanent jobs. Their relative success since 1979 probably also reflects their greater concentration in services, compared with men's concentration in manufacturing.

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6. **Sharp declines in pension participation rates have been registered in a few industries. Between 1979 and 1983 pension participation dropped by seven percentage points in construction, four percentage points in wholesale, and three percentage points in both transportation and public employment. The declines are probably a result of recessionary pressures and unique circumstances. For example, construction and transportation have experienced rapid shifts toward nonunion employment, accompanied by deregulation in the case of transportation. Government has experienced rising use of temporary employees in part because of tax and spending limitations. See Andrews, *Changing Profiles of Pensions*, pp. 105-132, for further details on industry trends.**

Since the CPS in May 1983, aggregate pension participation has risen probably because of the economic recovery. The overall gain has been probably slight, though, for two reasons: because the prerecession level observed in 1979 was only two to three percentage points higher, and because surging imports have limited the recovery in manufacturing--which in normal expansions includes a high proportion of new employees in pensions.

The longer-run outlook is for no or modest growth in pension participation. A continued shift of employment from high- to low-participation industries could offset pension growth within industries. Also, legislative restrictions enacted in the 1970s and early 1980s may have permanently slowed the formation of new plans. Declines in new plan formation were evident after passage of ERISA in 1974 and TEFRA in 1982. The Tax Reform Act of 1986, however, has provisions that on balance could

TABLE 11. PARTICIPATION IN PENSIONS BY FULL-TIME EMPLOYEES IN MANUFACTURING AND SERVICES
(In percent)

	1972		1979		1983	
	Participation Rate	Share of Employment	Participation Rate	Share of Employment	Participation Rate	Share of Employment
Manufacturing	62	37	65	34	64	30
Services	30	17	36	19	36	23
Both Combined	52	54	55	53	52	53

SOURCES: Data for 1979 and 1983 from Congressional Budget Office tabulations of the May 1983 Current Population Survey and the May 1979 Current Population Survey of the Bureau of the Census. Data for 1972 from tabulations of the April 1972 Current Population Survey taken from Walter W. Kolodrubetz and Donald M. Landay, "Coverage and Vesting of Full-Time Employees Under Private Retirement Plans," *Social Security Bulletin*, vol. 44 (July 1981), pp. 3-11, with percentage participating adjusted to reflect those responding.

NOTE: Participation rates refer to percentages of employees participating in pensions. Share of employment refers to the share of manufacturing and services in total full-time employment.

either increase or curtail pension participation. On the other hand, as the baby boom generation ages, participation could grow modestly.

Participation in Keoghs

Over 9 million people were counted by the CPS as unincorporated self-employed in May 1983, and 450,000 of these, or 5 percent, had Keogh plans--dramatically lower than the 54 percent pension participation rate

TABLE 12. CHANGES IN PENSION PARTICIPATION FROM 1972 TO 1983, BY SEX AND BY SECTOR OF EMPLOYMENT, FOR FULL-TIME EMPLOYEES

	Percent Participating		
Employee Group	1972	1979	1983
Private Sector			
All Employees	49	50	47
Men	54	55	51
Women	37	40	41
Public and Private Sectors			
All Employees	n.a.	56	54
Men	n.a.	61	57
Women	n.a.	49	49

SOURCES: Data for 1979 and 1983 from Congressional Budget Office tabulations of the May 1983 Current Population Survey and the May 1979 Current Population Survey of the Bureau of the Census. Data for 1972 from tabulations of the April 1972 Current Population Survey taken from Walter W. Kolodrubetz and Donald M. Landay, "Coverage and Vesting of Full-Time Employees Under Private Retirement Plans," *Social Security Bulletin*, vol. 44 (July 1981), pp. 3-11, with percentage participating adjusted to reflect those responding.

NOTE: n.a. means not available. The pension supplement to the 1972 Current Population Survey was restricted to private-sector employees.

found among full-time employees. The actual difference must be even greater because the survey asked only if the person had a Keogh account, not whether a contribution had been made in the current year.

Several explanations have been offered for the lower participation among the unincorporated self-employed. One is that they often invest their retirement savings in the business, which can eventually be sold to finance retirement. Another explanation is the complexity of maintaining a Keogh plan for one or a few persons. IRAs are simpler; as documented below, they are three times as common as Keoghs among the unincorporated self-employed.

IRA Participation

The number of tax returns reporting IRA contributions more than quadrupled between 1981 and 1984 (see Table 13). Most of the increase came in 1982, the first year eligibility was expanded to those already participating in an employer pension or Keogh plan. In 1981, 3.4 million returns reported IRA contributions; in the following three years, the number rose to 12.0 million, 13.7 million, and 15.2 million.

The expansion of IRA eligibility in 1982 approximately doubled the population eligible for an IRA because about half of the employed population participates in a pension. The quadrupling of IRAs after eligibility doubled

TABLE 13. TAX RETURNS REPORTING CONTRIBUTIONS

Year	Reporting Wage and Salary Income (millions)	Reporting IRA Contributions (millions)	Reporting IRA Contributions (percent)
1981	84.2	3.4	4.1
1982	83.1	12.0	14.5
1983	83.3	13.7	16.5
1984	85.9	15.2	17.7

SOURCE: U.S. Department of Treasury, *Statistics of Income.*

shows that those already participating in pensions were much more likely to open IRAs than were others. Apparently, participation in an employer pension is an indicator of interest in tax-favored retirement savings. Since pensions provide little flexibility to individuals in the amount they can accumulate this way, those preferring to accumulate more were able to do so when IRAs became available. The IRAs also had features--immediate vesting, portability, and greater flexibility in access to savings--that made them attractive to those disinclined to lock additional saving into a pension plan.

IRAs have been more common among higher-income people because people with higher incomes tend to save more, and because the income-tax advantage of IRAs rises with marginal tax rates. In addition to these similarities between IRAs and pensions, people newly allowed to use IRAs were permitted to transfer existing assets into IRAs, and higher-income (and older) people are more likely to have accumulated assets to transfer.

In 1982, when 14.5 percent of all returns with wage and salary income reported an IRA contribution, only 3.1 percent of those with adjusted gross incomes below $15,000 reported an IRA contribution, compared to almost half of the those with adjusted gross incomes between $40,000 and $75,000 (see Table 14). The pattern for contributions in 1983 and 1984 was similar.

TABLE 14. INCIDENCE OF IRA CONTRIBUTIONS BY ADJUSTED GROSS INCOME IN 1982

Adjusted Gross Income Class (dollars)	Returns Reporting Wage and Salary Income (millions)	Returns Reporting IRA Contributions (millions)	Returns Reporting IRA Contributions (percent)
All Classes	83.1	12.0	14.5
Under 15,000	41.1	1.3	3.1
15,000 - 25,000	17.3	2.2	12.7
25,000 - 40,000	16.4	4.1	25.3
40,000 - 75,000	7.1	3.5	48.8
Over 75,000	1.2	0.9	76.3

SOURCE: U.S. Department of Treasury, *Statistics of Income*.

Thus data from tax returns indicate that IRA participation has been highest among those who will be limited to nondeductible IRAs beginning in 1987. As noted in Chapter II, the Tax Reform Act of 1986 phases out the IRA deduction for higher-income people with pensions. If 1983 patterns of IRA contribution and participation were continued into 1988 without tax reform, CBO projects that 16.6 million tax returns would report contributions to an IRA. On this assumption, tax reform would make 40 percent of the returns ineligible for any deduction and leave 12 percent eligible for reduced deductions. Only 48 percent would remain eligible for full deductions (see Table 15).

Although IRAs have been used at higher rates by higher-income people, in some ways they have been less important to the highest-income people than to middle-income people. The $2,000 contribution limit has meant that an IRA contribution becomes a smaller and smaller percentage of a person's income at higher income levels even though more and more people use them. Thus, on net, IRA contributions in 1982 were a smaller percentage of income among all taxpayers with income in excess of $75,000 than among all taxpayers with income between $25,000 and $75,000.

Comparing IRA and Pension Participation Rates

As with pensions, participation in IRAs increases with age and earnings. The patterns, however, differ. In the case of IRAs, participation rises from 3 percent under age 25 to 19 percent for ages 35-44, and 39 percent for ages

TABLE 15. IMPACT OF TAX REFORM ON TAXPAYERS WITH IRAs IN 1988

	Status of Contributions Under Tax Reform			
Taxpayers	Fully Deductible	Partially Deductible	Not Deductible	Total
Millions	8.0	2.0	6.6	16.6
Percent	48	12	40	100

SOURCE: Congressional Budget Office.

TABLE 16. PENSION AND IRA PARTICIPATION OF FULL-TIME EMPLOYEES, BY AGE

Age	Participating in Pension (percent)[a]	Having An IRA (percent)[b]
All Ages	54	18
14 - 24	26	3
25 - 34	52	11
35 - 44	63	19
45 - 54	65	30
55 - 64	66	39
65 and Over	39	27

SOURCE: Congressional Budget Office tabulation from the May 1983 Current Population Survey of the Bureau of the Census.

a. From Table 7.

b. The percentage of persons not knowing whether they had an IRA was well under one, so the percentage not having an IRA can be closely approximated as one hundred minus the percentage having an IRA.

55-64. This steady growth contrasts with pension participation, which reaches a plateau of 62 percent to 66 percent for ages 35-64. Because pensions reach their maximum participation rate earlier, the gap between pension and IRA participation is greatest before age 55 (see Table 16). [7]

Within age groupings, the percentage having an IRA rises throughout the income distribution. In contrast to pension participation, which levels off at incomes above $20,000, IRA participation grows steadily (see Table 17). In the younger age group shown in the table, the percentage having an

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[7] The data for comparing IRA and pension participation, provided by the May 1983 Current Population Survey, are not entirely satisfactory. One reason is that the survey fails to distinguish between people having an IRA and those currently contributing to one. Pension participation, on the other hand, refers only to the situation on the current job. Another problem, mentioned earlier, is the underreporting of income other than that from wages and salaries. Because of this problem, the CPS tabulations on IRAs use earnings rather than income, as was done with the earlier pension tabulations.

IRA rises from 5 percent for those earning under $10,000 to 10 percent for those earning $15,000 to $20,000. It then jumps to 32 percent for those earning more than $35,000. In the older age group, IRA use is generally

TABLE 17. PENSION AND IRA PARTICIPATION OF FULL-TIME EMPLOYEES, BY AGE AND EARNINGS GROUPS

Earnings Group (thousands of dollars)	Participating in Pensions (percent)[a]	Having an IRA (percent)[b]
All Employees	54	18
	Ages 25-34	
Under 10	24	5
10 - 15	47	6
15 - 20	60	10
20 - 25	68	12
25 - 35	67	20
Over 35	71	32
All	51	11
	Ages 45-64	
Under 10	34	15
10 - 15	57	21
15 - 20	71	32
20 - 25	80	32
25 - 35	82	45
Over 35	85	63
All	63	33

SOURCE: Congressional Budget Office tabulation from the May 1983 Current Population Survey of the Bureau of the Census.

a. From Table 8.

b. In these age groups, essentially all respondents knew if they had an IRA.

higher but shows the same steady growth with earnings--rising from 15 percent for those earning under $10,000 to 32 percent for those earning $15,000 to $20,000 and to 63 percent for those earning above $35,000.

The greater concentration of IRAs than pensions among older and higher-paid employees probably results from several influences. One is that a pension, by including most of a firm's employees, probably extends retirement savings to younger ages and lower incomes than people themselves would choose. Another factor is the newness of IRAs. As noted earlier, much of the surge in IRAs in 1982 and 1983 probably resulted from the transfer of existing assets into IRAs; older and higher-paid employees were the most likely to have had such assets to transfer. Another influence is the use of IRAs as supplemental retirement savings for those with pensions. Older and higher-paid people are more likely to engage in additional retirement saving beyond that provided through their pensions, while younger and lower-paid people are more likely to satisfy their retirement saving needs with their pensions. In other words, the previous existence of pensions when IRAs were introduced may have shifted the use of IRAs toward older and higher-paid employees.

Employees Having Both Pensions and IRAs. In May 1983, 12 percent of all full-time employees had both an IRA and a pension. They comprised 23 percent of all pension participants. In contrast, 5 percent had only an IRA, or just 13 percent of those without a pension. So after 17 months of being eligible, pension participants were more likely to have an IRA than nonparticipants who had been eligible since 1974. In spite of the rapid growth of IRAs, however, pensions remain the only tax-favored saving for 40 percent of all full-time employees. As suggested by results reported earlier, the joint use of pensions and IRAs rises sharply with age and earnings (see Table 18 for details).

Employees Having Neither Pensions nor IRAs. By the same token, employees with neither pensions nor IRAs were heavily concentrated among the lower-paid. Among employees earning less than $15,000, roughly 50 percent of those age 25 to 34 and about 40 percent of those age 45 to 64 were uncovered. Among those paid under $15,000, the percent having only an IRA was much smaller than the percent having nothing. Among those age 45 to 64, who are paid over $25,000, however, the percent with only an IRA exceeded the percent uncovered.

The absence of IRAs among lower-paid employees without pensions suggests that most of them prefer to consume as much of their current earnings as they can. If so, they might also be uninterested in pension coverage if their employers were to reduce their pay to cover pension costs.

TABLE 18. PENSION AND IRA PARTICIPATION, BY AGE AND EARNINGS GROUPS

Earnings (thousands of dollars)	Full-Time Employees (millions)	Having Pension Only (percent)	Having IRA Only (percent)	Having Both (percent)	Having Neither (percent)	Do Not Know (percent)
All Employees	74.6	40	5	12	34	7
			Ages 25-34			
Under 10	3.9	21	2	3	60	14
10 - 15	5.8	44	3	3	42	8
15 - 20	4.7	54	4	6	31	5
20 - 25	3.8	59	3	9	24	4
25 - 35	2.8	54	7	13	22	4
Over 35	1.0	48	7	23	17	5
All	22.0	45	4	6	36	7
			Ages 45-64			
Under 10	3.1	27	9	6	50	8
10 - 15	4.4	44	8	13	30	5
15 - 20	3.6	50	10	21	15	4
20 - 25	3.1	53	6	26	11	3
25 - 35	2.8	45	8	36	7	2
Over 35	2.1	30	8	54	5	2
All	19.2	40	9	23	21	4

SOURCE: Congressional Budget Office tabulation from the May 1983 Current Population Survey of the Bureau of the Census.

NOTE: Age group data exclude those not reporting their earnings. The percentage having only an IRA and the percentage having both an IRA and participating in a pension can add to less than the percentage having an IRA in Table 16. Those having an IRA but uncertain about their pension status are classified as "Do Not Know" in this table. No corresponding difference occurs for pension participation because so few of those having pensions are uncertain whether they have an IRA.

Pension and IRA Participation by Spouses

Married persons normally plan for retirement as couples. Hence it may be misleading to focus on individual pension and IRA coverage. An employee with neither a pension nor an IRA may be counting on a spouse's retirement coverage. Another who participates may have a spouse who does not. Both couples are in a similar position even though the individuals examined differ in their coverage. In still a third situation, a participating employee may have a spouse who is also covered; while this third employee taken as an individual resembles the second, the couple's coverage could support a higher standard of living in retirement.

In fact, however, spousal participation is uncommon among those who do not participate themselves. 8/ Of the 4.1 million employees between the ages of 45 and 64 who participated in neither a pension nor an IRA in May 1983, only 19 percent had a participating spouse (Table 19). Thirty-two percent of them were single, and 44 percent had spouses who either worked full time without a pension or an IRA, or worked less than full time and did not receive pension income. Thus a large majority of the 4.1 million full-time employees without their own pension or IRA lacked retirement coverage through a spouse. (People of ages 45 to 64 are examined because employees not covered at these ages will have difficulty accruing substantial benefits before normal retirement age.)

Spousal participation is more common among employees who participate themselves. Three-fourths of full-time employees age 45 to 64 participated in a pension or IRA themselves, and one-third of these have a participating spouse.

The likelihood of having a participating spouse is not strongly related to an employee's own earnings. Employees identified in Table 18 as earning below $15,000 are slightly more likely to have a participating spouse than those earning above $15,000, whether the comparison is among participating or nonparticipating employees (see Tables 19 and 20).

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8. In this context spousal participation means participating in a pension plan as defined above, receiving pension income, or having an IRA. Receiving pension income is included because one spouse may already be retired even though the other is still employed full time.

TABLE 19. SPOUSE BENEFITS AMONG FULL-TIME EMPLOYEES AGE 45 TO 64 NOT PARTICIPATING IN A PENSION OR IRA, BY EARNINGS GROUPS

Earnings Group (thousands of dollars)	Number of Employees (millions)	Spouse Employed Full Time and Participating in Pension[a] or IRA (percent)	Spouse Not Employed Full Time or Not Participating in Pension or IRA (percent)	No Spouse (percent)	Spouse Status Not Known (percent)
All	4.1	19	44	32	6
Under 15	2.9	20	42	35	4
Over 15	1.3	18	48	25	9

SOURCE: Congressional Budget Office tabulation from the May 1983 Current Population Survey of the Bureau of the Census.

a. Includes spouses receiving pension income in 1982.

TABLE 20. SPOUSE BENEFITS AMONG FULL-TIME EMPLOYEES AGE 45 TO 64 PARTICIPATING IN A PENSION OR IRA, BY EARNINGS GROUPS

Earnings Group (thousands of dollars)	Number of Employees (millions)	Spouse Employed Full Time and Participating in Pension[a] or IRA (percent)	Spouse Not Employed Full Time or Not Participating in Pension or IRA (percent)	No Spouse (percent)	Spouse Status Not Known (percent)
All	14.4	33	42	21	3
Under 15	4.2	37	29	29	5
Over 15	10.1	32	48	18	2

SOURCE: Congressional Budget Office tabulation from the May 1983 Current Population Survey of the Bureau of the Census.

a. Includes spouses receiving pension income in 1982.

401(k) Plans

Although 401(k) plans had been authorized by statute in 1978, few private employers introduced them until after preliminary regulations were issued in 1981. By May 1983, 4.8 million employees or 7 percent of all private-sector employees reported having access to 401(k) plans. 9/ Accessibility has grown rapidly since, but information on the plans is limited to those of larger employers. 10/ A survey of medium- and large-sized firms by the Bureau of Labor Statistics found that 26 percent, or 5.3 million, employees of these firms had access to 401(k) plans. 11/ These firms have 20.5 million full-time employees, about one-fourth of all private full-time employees. Some smaller firms also offer 401(k) plans, but the incidence is certainly lower. Much of the expansion of 401(k) plans has been as a substitute for other plans, particularly thrift plans under which contributions are not deductible.

Participation rates in 401(k) plans appear to be higher than in IRAs. The 1983 CPS found that 39.1 percent of the 4.8 million people offered a 401(k) plan contributed to it, while only 16.5 percent of all private employees contributed to an IRA in that year.

The higher participation rate in 401(k) plans is not surprising. To begin with, those firms that decided quickly to offer 401(k) plans probably had employees who were interested in such saving. Moreover, several features of 401(k) plans make them more attractive than IRAs: many employers match employee contributions; the contribution limit is generally higher than for an IRA; loans are often permitted; and funds may be withdrawn without penalty before retirement in certain cases of need.

The difference between participation rates for 401(k) plans and for IRAs is greatest among younger and lower-paid employees. For example, among privately employed people age 25 to 34 who had access to a 401(k) plan, 31 percent participated compared with 11 percent of the same age group who contributed to an IRA. Also, among private employees earning $10,000 to $15,000, 28 percent with access to a 401(k) plan contributed to it compared with the 11 percent of employees in the same earnings group who contributed to an IRA (see Table 21).

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9. Andrews, *Changing Profiles of Pensions*, p. 83.

10. Data on salary reduction plans other than 401(k) are largely unavailable.

11. U.S. Department of Labor, Bureau of Labor Statistics, *Employee Benefits in Medium and Large Firms 1985* (July 1986), p. 76

TABLE 21. 401(k) USAGE (MAY 1983) AND IRA USAGE (1982) AMONG PRIVATE NONAGRICULTURAL WAGE AND SALARY WORKERS, BY EARNINGS AND AGE GROUPS

	Section 401(k) Deferred Compensation		Individual Retirement Accounts	
	Number Offered Plan (thousands)	Rate of Participation (percent)	Number of Workers (thousands)	Rate of Participation (percent)
Total	4,822	39.1	72,465	16.5
Age				
Under 25 years	555	19.8	16,415	2.3
25 - 34	1,627	30.7	21,553	11.0
35 - 44	1,364	43.0	14,681	18.5
45 - 54	795	49.5	10,627	30.3
55 - 59	302	56.9	4,723	39.9
60 - 64	139	68.1	2,835	37.1
65 and Over	a/	a/	1,630	20.3
Earnings (In dollars)				
1 - 4,999	111	a	8,551	6.3
5,000 - 9,999	379	20.2	13,305	7.3
10,000 - 14,999	791	28.0	14,459	10.7
15,000 - 19,999	934	33.7	10,196	16.8
20,000 - 24,999	769	39.9	7,842	19.3
25,000 - 29,999	574	45.4	4,292	27.8
30,000 - 49,999	832	51.5	5,336	33.2
50,000 and over	273	62.1	1,412	58.9

SOURCE: Emily Andrews, *The Changing Profile of Pensions in America* (Washington, D.C.: Employee Benefits Research Institute), 1985, p. 84. Tabulations of the May 1983 Current Population Survey pension supplement.

a. Number of workers too small for rates to be calculated reliably.

Use of 401(k) plans is much more extensive in very large firms than in smaller firms. A 1985 survey of 195 firms with average employment of 25,000 found almost 60 percent of the employees were offered plans and 75 percent of these contributed. 12/ Participating employees contributed an average 6.7 percent of earnings to the 401(k) plan. Variation in plan use at these large firms suggests that special features of 401(k) plans helped to raise participation above that in IRAs. Participation was higher in plans in which employers matched employee contributions, in which funds could be withdrawn in case of need, and in which borrowing was permitted.

The 1986 tax reform is unlikely to reduce the interest in 401(k) plans. Most employees will not be affected by the $7,000 ceiling on contributions, nor will the decline in their marginal tax rates reduce the gain from the tax advantages by much (see Figure 1 in Chapter I). The advantages of 401(k) plans will be reduced significantly for those highly paid employees whose marginal tax rates will be substantially cut and who will be affected by the $7,000 ceiling. However, the restrictions placed on IRAs mean that 401(k) plans will be the only voluntary qualified savings plans available to these employees who are covered by another employer plan. Thus, the growth of 401(k) plans is likely to continue, although much of it may come as a replacement for IRAs and other employer plans. Whether 401(k) plans will extend retirement saving to many of those who otherwise would be uncovered by any employer plan remains to be seen.

RETIREMENT INCOMES OF TODAY'S WORKERS

Based on current participation in qualified plans and IRAs, it is possible to project ~~the future retire~~ment benefits of today's workers.

The Projection to 2019. The projection that follows started with a representative sample of people age 25-34 in 1979 and carried current patterns of lifetime work, family status, and retirement to the year 2019 when they will be age 65 to 74. 13/ A key step was the projection of retirement income from qualified plans and IRAs. Pension income was projected

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12. *Survey of Plan Design and Experience in 401(k) Salary Reduction Plans* (New York: Hewitt Associates, 1985), pp. 1-3.

13. The projection is based on a simulation of the Pension and Retirement Income Simulation Model by ICF Incorporated. Appendix C describes the projection in greater detail and refers to further documentation of the simulation.

using the participation patterns documented in the previous section, and employing pension formulas from actual plans. IRA withdrawals were projected using participation and contribution rates observed through 1983. The projection did not include the effects of provisions in the Tax Reform Act of 1986, nor the requirement to share pension benefits with spouses under the Retirement Equity Act of 1984. The effects of these laws on projected outcomes are, however, likely to be modest. 14/

In the year 2019, the projection finds 45 percent of the age group to be single. Three-fourths of the single people are women and few are working full time. Eighty percent of the single women are widowed or divorced. Among couples, one out of five has at least one spouse still working full time. The greater incidence of full-time work among couples is primarily because some of the people in the sample are married to younger spouses.

Incomes of the Elderly in 2019

Economic growth is assumed to average about 1 percent per year over the 40-year projection, raising real incomes by about one-half compared with today. Pension income rises more rapidly than other income sources for the elderly, largely because of increased pension participation among today's workers compared with earlier workers. The projection shows employer pensions being received by two-thirds of the elderly singles and 90 percent of those elderly couples in which neither spouse works full time (referred to as retired couples hereafter). Pension benefits average about 30 percent of total income for singles and retired couples in 2019. The

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14. The Tax Reform Act of 1986 is unlikely to change the projected retirement incomes greatly. The limitation on deductible IRAs, omitted in the projection, is likely to be mostly offset by the expansion of salary reduction plans, also omitted from the projection. The lower tax rates and the changes in the qualification conditions in tax reform are likely to have modest effects on projected retirement incomes for reasons explained later in this chapter and in Chapter IV.

    The projection assumes that one-quarter of husbands ignore joint-and-survivor options in their pensions, and that divorces do not result in a division of pension benefits. The Retirement Equity Act and recent court settlements suggest these past practices will change. The Retirement Equity Act has been projected in the PRISM model used here to have modest effects on retirement incomes, but those effects are concentrated on the poorest women. See "The Potential Impact of Changes in Pension Regulation on Women's Retirement Income," Public Research Institute and ICF Incorporated, December 1985, pp. IV-1 to VI-9.

incidence of pension receipt and its share of total income are only about half as large today. 15/

Poverty. Poverty remains a substantial problem for elderly singles in 2019. The poorest quartile are near or below the poverty line, and the average income of the poorer half is 125 percent of the poverty level. In 1984, by comparison, 28 percent of their counterparts were in poverty and 41 percent had incomes below 125 percent of the poverty line. Poverty in the projections is primarily the plight of single elderly women, as it is today. Over 90 percent of those in the poorer half of singles in the projection are women. Their low incomes arise from limited work experience and from inadequate provision for income after divorce or death of a spouse.

Social Security is the mainstay of income among lower-income singles and retired couples in 2019. Nearly all receive it, and it provides around 70 percent of income for those in the poorer half of singles and almost 60 percent for those in the poorer half of retired couples. Though Social Security is less important for those in the top half of the income distribution, it still contributes about one-third of income.

Pension Income. By contrast, pensions are projected to be an important income source among the richer half of the elderly in 2019. Eighty-four percent of the richer half of singles receive pensions, accounting for one-third of their income. About 50 percent of the poorer half of singles receive pensions, which contribute only around 10 percent of their income. Pension income is more evenly distributed among retired couples, contributing 19 percent of income to the poorer half and 38 percent to the top half. IRA income, if it had not been restricted by tax reform, would be even more tilted to higher-income retirees than pension income, but only about one-quarter as large.

Variations in Pension Income. The amount of pension income varies considerably among people of similar retirement incomes in 2019. These differences in pension income reflect variation in the number of years they participated in a single pension plan. Those with long participation under a single employer receive substantially more pension income than those with shorter tenures. For example, among retired couples whose incomes fall in the lower-middle-income quartile, those with 20 or more years under a plan

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15. Susan Grad, *Income of the Population 55 and Over, 1984*, U.S. Department of Health and Human Services (1985), pp. 3 and 90.

average pensions of $10,800; while those with fewer years under one plan average pensions of $3,400 (in 1984 dollars). Total incomes are kept similar in the quartile by offsetting variation in income from personal saving, earnings, and Social Security.

Long job tenures under a single plan lead to higher pension income for three main reasons. Those without long tenure on one job may have few years under any pension. Further, those with short tenures may have failed to vest at some jobs. Finally, defined benefit plans that base pension benefits on final pay give substantially lower benefits to employees who leave much before retirement, since their final pay does not reflect inflation or real salary growth between leaving and retirement. For example, the pension of a person leaving a defined benefit plan 15 years before retirement would be eroded by 15 years of inflation--a 45 percent reduction in value at the projection's 4 percent inflation rate. Nor would the pension reflect any real salary growth in the last 15 years of employment. Both of these influences, however, would raise the pensions of the long-service workers in defined benefit plans. (See Chapter II for further discussion of job tenure and benefits in defined benefit plans.)

Variations in job tenure tend to be greatest between men and women. Consequently, the longest tenure of single people, most of whom are women, averages 15 years compared with 21 years for couples. Substantial variation in plan tenures also exists among singles and among couples. For example, in the lower-middle-income quartile of couples, 18 percent have less than 9 years for their longest plan tenure, 35 percent have longest tenures of 9 years to 19 years, and 47 percent have longest tenures of 20 years or more.

GAINS IN RETIREMENT INCOME FROM THE TAX ADVANTAGES

The projection to 2019 incorporates the tax treatment for qualified saving that existed in 1986. That is, contributions to IRAs and most contributions to pension plans are deductible from income, interest earned by qualified accounts is not taxed, and pension payments and withdrawals from IRA accounts are fully taxable.

An estimate of the income gain allowed by these tax advantages can be obtained by making an alternative projection in which qualified saving is taxed annually, like a regular savings account. The differences in after-tax retirement incomes between the two projections is the contribution of the tax advantages to retirement incomes.

More precisely, incomes in the second (annual tax) projection are calculated using the same lifetime patterns for people described above, except that:

- Employers pay their pension contributions directly to employees as taxable wages. Contributions to IRAs are not deductible.
- Employees maintain their current consumption, and save for retirement the after-tax remainder of amounts that were employer-plan contributions or IRA contributions in the projection under current law.
- Earnings of all savings accounts are included in taxable income in the year they accrue. The marginal tax on the earnings is paid from the earnings so that the accounts accumulate at an after-tax rate.

Thus, in the absence of the tax advantages, people are assumed to save for retirement in taxable savings accounts. At retirement, the accounts are used to purchase life annuities as is done with pension funds in the projection under current law. Because people in the annual-tax alternative reduce their retirement accounts by the amount of the tax due, they allocate no more nor less of their personal consumption to saving in the absence of the tax advantages. Thus, the gain in retirement income is simply the accumulated value of the tax advantages. 16/

If the tax advantages led people to change their behavior by, say, consuming less and saving more, then their retirement incomes would rise by more than the cumulated value of the tax advantages. The projections used here assume that people do not change their saving behavior because of the tax advantages, an assumption that is broadly consistent with the limited evidence available (see Chapter IV).

The Size and Distribution of Gains

The tax advantages increase retirement incomes in 2019 by 14 percent for singles, 21 percent for retired couples, and 12 percent for working couples.

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16. The procedure for calculating the gain from the tax advantages is essentially the same as in the simple example of Table 1 in Chapter I. The main difference is that the pattern of contributions in the projections is intended to reflect probable lifetime patterns. Appendix C provides further background on the two projections and the saving assumption.

For example, after-tax income for retired couples in 2019 is projected to average about $26,100 under annual taxation of retirement savings and $31,500 under current law, for a 21 percent difference (see Table 22).

Underlying the average income gains are strong correlations of the gain with income levels and plan tenure. For example, in Table 22 the income gain in the lowest-income quartile for retired couples is 14 percent compared with 24 percent in the highest-income quartile. Likewise, in Table 24 the income gain for retired couples with less than 20 years under a single pension plan averages 11 percent compared with 28 percent for those with longer participation.

Gains Distributed by Income. Gains from the tax advantages are correlated with retirement income because higher retirement incomes generally are based on higher earnings in the working years. Higher earnings mean higher tax rates and of course higher tax rates increase the gain from the tax advantages. Also, people with higher earnings save more, relative to their incomes, in qualified plans and IRAs. They do so because a higher proportion of them participate in pensions and IRAs, and because in integrated plans they accrue benefits at a higher rate.

The gains from the tax advantages are distributed most unevenly among singles (see Table 22), where they raise retirement income of the lowest-income quartile by 2 percent and of the lower-middle-income quartile by 5 percent but raise the incomes of the upper-middle-income and highest-income quartiles by 11 percent and 21 percent. 17/ Because the gains of the lower-income half of singles are small, nearly all of the benefits go to the upper-income half. Ninety-four percent of the total gain by singles goes to the upper-income half, and 73 percent to the top quartile. 18/

The small gains for the lower-income half of singles largely reflect the fate of elderly single women. As noted above, over 90 percent of this group are women. Their gains are small because their own labor force

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17. The distribution of income gains from the tax advantages is much less even than the distribution of tax gains used in an earlier study by Korczyk. The primary reason is that the gain used in that study is the gain relative to taxes paid, not relative to after-tax income as used here.

18. Income in the absence of the gain is more evenly distributed--74 percent to the upper-income half, 49 percent to the top quartile.

TABLE 22. GAINS IN AFTER-TAX INCOME IN THE YEAR 2019 (In 1984 dollars)

Quartiles of Income Under Annual Tax Projection	Average Income Under Annual Tax Projection	Average Gain From Tax Advantages	Percent Increase	Quartile Percentage Share of Total Gain
		Single People in 2019		
All	12,389	1,760	14	100.0
Q1	5,070	116	2	0.3
Q2	8,210	394	5	5.8
Q3	12,484	1,405	11	20.8
Q4	23,683	4,908	21	72.9
		Couples Retired in 2019		
All	26,085	5,410	21	100.0
Q1	14,276	1,965	14	9.1
Q2	21,345	3,630	17	16.7
Q3	27,426	6,133	22	28.3
Q4	41,240	9,883	24	45.8
		Couples Working in 2019		
All	51,173	6,282	12	100.0
Q1	30,659	2,677	9	10.6
Q2	43,166	4,706	11	18.6
Q3	55,415	6,058	11	24.0
Q4	75,128	11,611	15	46.6

SOURCE: Congressional Budget Office.

NOTE: All incomes are after-tax incomes.

participation and that of their divorced or deceased husbands leave them little income from qualified plans. Many women receive little income from plans because women are less likely to be in the labor force than men, and when they do work they are less likely to participate in a plan and less likely to participate for as many years. Many women lose pension contributions by leaving jobs before vesting, and some of these women would be better off if the contributions had been paid directly as wages and saved in taxable accounts. The tax advantages are often small for these women because their earnings and tax rates are low, so the loss of unvested contributions offsets the small gains from tax-free accumulation in qualified accounts. Pensions from husbands may be understated slightly in the projection, thereby understating slightly the gain of lower-income single women (as discussed in footnote 14).

The distribution of the gain is more uniform among retired couples than among singles because the lower-income half shares in the gains of the tax advantages, which raises incomes of retired couples by 14 percent in the lowest-income quartile and 24 percent in the highest-income quartile. That spread is substantially narrower than the comparable 2 percent to 21 percent spread among singles., The narrower spread in gains means that a smaller share of total benefits falls to the upper-income half of retired couples. Nonetheless, a strong tilt toward upper-income groups remains. Seventy-four percent of the gains accrue to the upper-income half, and 46 percent go to the top quartile. 19/

Gains are much more evenly distributed among couples in which at least one spouse works full time, since the gains of higher-income couples in this group are held down. Frequently both spouses in high-income couples are working full time, so the retirement income gains these couples ultimately will receive are not reflected in incomes for 2019. This is, of course, only temporary. When one or both of the spouses retire sometime after 2019, the couple will receive a large boost in retirement incomes from the tax advantages.

Gains Distributed by Plan Tenure. Gains from the tax advantages are correlated with plan tenure because longer plan tenure means higher pension saving and greater interest accumulation. As discussed above, people who work most of their careers under one plan will have more qualified plan saving than those who work many years without any plan. Further, people

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19. Income in the absence of the gain is more evenly distributed--66 percent to the upper-income half and 40 percent to the top quartile.

who work under a single plan will have more qualified plan saving than others who spread the same years of participation among more than one plan. Spreading plan participation among different plans reduces total plan saving because vesting requirements are less likely to be met and because defined benefit plans are structured to favor the long-term employee. Tables 23 to 25 show the gains by plan tenure.

The projections find that bigger differences in gain exist between short and long plan tenures than between low and high incomes. Table 24 shows that among retired couples, for example, those with a plan tenure of less than 20 years gain an average 11 percent from the tax advantage, while those with the longer tenures gain 28 percent. In contrast, the lower-

TABLE 23. GAINS IN AFTER-TAX INCOME BY PLAN TENURE IN THE YEAR 2019 FOR SINGLES (In 1984 dollars)

Quartiles of Income Under Annual Tax Projection	Years of Longest Plan Tenure	Average Income Under Annual Tax Projection	Average Gain From Tax Advantage	Percent Increase
All	Under 20	10,337	596	6
	20+	17,610	4,755	27
Q1	Under 20	5,014	44	1
	20+	5,472	1,416	26
Q2	Under 20	8,144	98	1
	20+	8,467	1,552	18
Q3	Under 20	12,361	722	6
	20+	12,760	2,927	23
Q4	Under 20	22,179	2,105	9
	20+	24,976	7,323	29

NOTE: All incomes are after-tax incomes.

income half gains 15 percent while the upper-income half gains 23 percent. 20/ Singles and working couples are also projected to have larger differences in gains by plan tenure than by income.

The differences between long and short tenure remain large within the income quartiles. Thus, among people projected to have similar retirement incomes under annual income taxation, large differences in gain occur as a result of different plan tenures. Among retired couples in the lower-middle-income quartile, for example, those with short and long plan tenures would have similar incomes except for the different gains from the tax advantages. Their incomes in the absence of the tax advantages are

TABLE 24. GAINS IN AFTER-TAX INCOME BY PLAN TENURE IN THE YEAR 2019 FOR RETIRED COUPLES (In 1984 dollars)

Quartiles of Income Under Annual Tax Projection	Years of Longest Plan Tenure	Average Income Under Annual Tax Projection	Average Gain From Tax Advantage	Percent Increase
All	Under 20	23,088	2,540	11
	20+	29,006	8,205	28
Q1	Under 20	13,936	1,104	8
	20+	14,975	3,829	26
Q2	Under 20	21,081	2,150	10
	20+	21,649	5,331	25
Q3	Under 20	27,452	3,700	13
	20+	27,406	8,019	29
Q4	Under 20	39,764	4,638	12
	20+	41,943	12,379	30

NOTE: All incomes are after-tax incomes.

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20. Based on averages of appropriate quartile gains in Table 22.

$21,100 and $21,600, while their respective gains are 10 and 25 percent (see Table 24). In higher-income quartiles, the gains of those with both short and long plan tenures rise, reflecting the correlation between gain and income. Still, the differences between short and long tenure remain large.

The disparity in gains by job tenure causes much of the disparity in gains among income quartiles. The reason is that long plan tenure is much more common at higher income levels. Thus, the distribution of gains by income quartiles is more even among people all of whom have plan tenures of under 20 years than it is among people of all plan tenures. The same is true for people all of whom have plan tenures of 20 or more years (see

TABLE 25. GAINS IN AFTER-TAX INCOME BY PLAN TENURE IN THE YEAR 2019 FOR WORKING COUPLES (In 1984 dollars)

Quartiles of Income Under Annual Tax Projection	Years of Longest Plan Tenure	Average Income Under Annual Tax Projection	Average Gain From Tax Advantage	Percent Increase
All	Under 20	48,609	3,778	8
	20+	53,713	8,761	16
Q1	Under 20	30,293	1,490	5
	20+	31,152	4,276	14
Q2	Under 20	43,188	3,138	7
	20+	43,136	6,767	16
Q3	Under 20	55,164	4,281	8
	20+	55,614	7,478	13
Q4	Under 20	74,578	7,312	10
	20+	75,504	14,547	19

NOTE: All incomes are after-tax incomes.

Tables 23-25). 21/ The importance of plan tenure to the income distribution of gains means that much of the disparity among income quartiles arises because higher-income retirees typically have more years of plan contributions, more often stay to vest, and, in defined benefit plans, more often stay until retirement.

Lifetime Gains

Income gains from the tax advantages are not limited to a single year, as in the foregoing tables. Gains occur in every year a person receives a plan benefit or IRA withdrawal.

The annual gains in other years would not all be the same as those calculated here for the year 2019. For example, one spouse might retire before the other, so that the gains in the couple's early years of retirement would represent only one spouse's gains; after the second spouse retired, the annual gain could rise if that spouse also participated in qualified plans or an IRA. Similarly, one spouse could die before the other, leaving the survivor with reduced gains. For such couples, the above tabulation for working couples, retired couples, and singles could roughly describe their lifetime pattern of income gains.

Effects of the 1986 Tax Reform

The Tax Reform Act of 1986, if applied to the projection for 2019, would probably reduce the average gain by a modest amount and also slightly reduce the inequality of its distribution. The features of the reform that would have these effects are the reduction in marginal tax rates, the nondeductibility of IRAs, and the added conditions for plan qualification.

The average reduction in marginal tax rates will be about five percentage points according to CBO calculations. This modest reduction holds for most participants in qualified plans, who will therefore experience only a slight reduction in gains from qualified plans.

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21. The importance of tenure to the income distribution of gains may be somewhat overstated in Tables 23-25 because the model used in making the projections does not reduce a person's other saving when that person has pension saving. In a more complete model, the income distribution of gains might be more equal, and more of the inequality that remains might be the result of differences in tax rates among income groups, plan integration with Social Security, and other factors.

The highly paid, who will have larger reductions in tax rates, will experience large reductions in gain from qualified savings. 22/ Such large reductions in gain among the highest paid will tend to equalize the distribution of gains among different income groups, but this equalization will cause only a modest change in the distribution of gains in Table 22. One reason is that the Current Population Survey on which the projection is based did not reflect earnings over $70,000 or so in 1984 dollars; another reason is that very few people, even in the top quartile of the income distribution, paid the top tax rates. For example, in 1983 only 2 percent of all taxpayers (or 8 percent of the top quartile) paid marginal rates over 40 percent.

The nondeductibility provision for most IRAs should also modestly reduce and equalize the gain from the tax advantages. Higher-paid people with pensions are the heaviest users of IRAs, and those affected by the change. The limited size of IRA contributions, however, and the possibility that some of these contributions could be diverted to 401(k) plans, means that the effects will be modest.

Other provisions of the tax reform act such as those expanding coverage, shortening vesting, and reducing integration with Social Security could also increase the equality among benefits received from tax advantages. But the net effects of these changes also should be modest, as discussed in Chapter V. 23/

Gains: the Overall Picture

The gains from the tax advantages can be an important source of income for retirees. The projections reported here calculate that these gains add an average of 14 percent to incomes for singles and 21 percent for couples. These gains are not evenly distributed among retirees. They are considerably larger for higher-income people, and the gains for lower-income singles, most of whom are women, average under 5 percent. Higher-income people gain disproportionately more because they are more likely to participate for many years in qualified plans, have higher tax rates, and

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22. Figure 1 in Chapter I shows how lowering tax rates will reduce the gain from the tax advantages for those paying top income tax rates and those paying average rates.

23. The projected size and distribution of gains from the tax advantages are also sensitive to offsetting revenue increases, effects of state and local income taxes, economic and demographic assumptions, and other influences, as discussed in Appendix C.

accrue benefits at faster rates because of plan integration with Social Security. The gains are still more uneven among people with different tenures under a single plan. For example, gains of retired couples with tenures of 20 years or more average 28 percent compared with 11 percent for couples with shorter tenure. Legislative changes can alter the distribution of gains reported here since most of these gains will accrue in the future, between now and 2019. The Tax Reform Act of 1986 already has worked to even out the disparities projected here, but should not cause a major change. Options for further changes are considered in Chapter VI.

CHAPTER IV

INCENTIVES, INCIDENCE, AND UNINTENDED USES

This chapter begins by outlining the saving incentives built into IRAs and qualified plans, and how these incentives affect individual and national saving rates. It then considers the question of who bears the costs of pension plans. Finally, it examines some of the ways in which pensions are used for purposes other than retirement income.

EFFECTS ON INDIVIDUAL SAVING

Do qualified plans and IRAs lead people to save more? The answer is not a simple one. If the tax advantages were allowed on all personal saving, they would affect different people in different ways. Some would save more, and some would save less. But the tax advantages are allowed only on limited contributions to IRAs and qualified plans, and these limits reduce the number who are induced to save more. On the other hand, the mandatory nature of pension participation and funding may increase the number who save more (when employer contributions to a pension plan are included in personal saving).

These conflicting influences are sorted out in the following discussion, which begins by considering the tax advantages as if they were available on all personal saving, as would be the case with consumption taxation. Then the effects of IRAs and salary reduction plans, with their limits on annual contributions, are considered. Finally, the effect of qualified plans with involuntary employee participation is considered. The conclusion, based largely on empirical studies, is that qualified plans and IRAs probably do not have much effect on individual saving rates, although the tax advantages have allowed pension participants to accumulate more wealth by the time they reach retirement age.

Saving When the Tax Advantages are Unlimited

The tax advantages raise the amount of future spending achievable per dollar saved, as shown in Chapter I. If this higher return is available on additional saving, it may induce some people to save more, just as a lower price for a product may lead some people to spend more on it. On the other hand, the higher return also means that previous levels of saving will allow an increase in future spending without further sacrifice. Some might prefer to divert part of that potential increase in future spending to current uses by saving less. Thus, people might either increase or decrease their saving if the tax advantages were available to all saving. The outcome would depend on how strongly they valued additional consumption in the future relative to the present. 1/ Of course, an outcome of no change in saving is also possible.

Evidence on how people would respond is inconclusive. The tax advantages would raise the rate of return on saving, and numerous studies have been undertaken to determine how a higher rate of return changes the personal saving rate. Although some studies have found that higher rates of return increase saving, most have found no effect, and a few have found that a higher return decreases saving. Overall, the results are still inconclusive. 2/

The Effects of IRAs

The legal limit on IRA contributions reduces the likelihood that the tax advantages of IRAs raise personal saving. Consider first those people who save more than the limit before they have access to an IRA. When they gain access to an IRA, they can deposit $2,000 (the legal limit) in the IRA, but they must continue to save the remainder in other accounts that do not earn

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1. Granting the tax advantages to all personal saving would reduce taxes and raise after-tax incomes compared with what normal income taxation would yield. If the revenue loss were offset by a higher tax on wages, then individuals would not experience the increase in after-tax income that encourages them to spend more currently (by saving less). Without this income effect, granting the tax advantages on all saving unambiguously encourages individuals to reduce their current consumption in favor of greater future consumption. In economic theory, this is referred to as the substitution effect.

2. See Mervyn King, "The Economics of Saving: A Survey of Recent Contributions," in Kenneth J. Arrow and Seppo Honkapohja, eds., *Frontiers of Economics* (Oxford: Basil Blackwell, 1986), pp. 271-276; Mordecai Kurtz, "Heterogeneity in Savings Behavior: A Comment," Arrow and Honkapohja, p. 315; Agnus Deaton, "Life-Cycle Models of Consumption," National Bureau of Economic Research Working Paper 1910, April 1986, pp. 9-12.

the tax-advantaged rate of return. Because any added saving would not earn a higher return, these people have no incentive to increase their saving. Shifting $2,000 of saving to an IRA increases their retirement income, however, and some of that increase would probably be diverted to current consumption through reduced saving.

Even those people who annually save less for retirement than the IRA limit may not face any incentive to increase their saving, since they can reach the annual limit by diverting other assets into the IRA. Many who were saving for retirement before the introduction of IRAs will be able to reach the maximum contribution through the transfer of already accumulated assets. Also, those without sufficient saving of their own can sometimes borrow profitably to make the maximum contribution to tax-advantaged accounts. 3/ In these cases, the tax advantages provide no incentive to increase saving because the advantages can be claimed up to the limit by using existing saving and other funds.

Such devices for reaching the contribution limit without increasing saving have their own limits, of course. Most people do not have inexhaustible amounts of previously accumulated assets for transfer to new IRAs. Also, borrowing to finance IRA contributions is advantageous only if the interest payments on the borrowed funds can be deducted from taxable income and if the pretax interest rate on those funds is not too much higher than the rate earned by the IRA.

In summary, IRAs provide a possible incentive to increase saving only when the saving a person would have done otherwise is less than the IRA limit, and when there are no accumulated or borrowed assets to transfer to

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3. For example, consider a taxpayer in the 28 percent tax bracket who uses $720 from a line of credit secured against his house to help finance a $1,000 contribution to his 401(k) account. The other $280 comes from the tax savings he gets in the first year for the $1,000 contribution. Under the assumptions of the examples outlined in Chapter I, and assuming that the taxpayer remains in the 28 percent tax bracket at age 60, that $1,000 will be worth $2,284 after taxes at that time. Assuming his mortgage lender charged him the same terms for the $720 loan, $2,284 is what he will also owe the lender. The loan and additional savings cancel one another, and therefore neither his net saving rate nor his retirement income has been increased. However, the taxpayer was able to deduct $1,564 ($2,284 - $720) in interest during the life of the loan and thereby decrease his taxes and increase his current consumption by $438 ($1,564 x .28).

the account.[4] Even when these conditions are met, however, IRAs may not lead to increased saving. Some people may prefer to reduce their saving so as to divert the tax advantage to current spending, as explained in the case where all saving is tax advantaged.

IRAs have been available to most contributors only since 1982, and the $2,000 contribution limit is modest. Thus, the amount of new saving caused by IRAs might be expected to be well below the amounts being deposited in them. The newness of IRAs also means that not much empirical analysis has been done to quantify their savings effect. One study, however, has tentatively concluded that IRAs increase saving.[5] Of course, the 1986 tax law's new restrictions on deductible contributions to IRAs will limit any such saving effect.

The Effects of Salary Reduction Plans

Salary reduction plans have structural differences from IRAs that make them more likely to increase saving. The differences are the higher contributions allowed most workers, and the frequent availability of matching employer contributions.

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[4] The saving incentive of IRAs is also influenced by the additional 10 percent tax on withdrawals before age 59½. The penalty discourages added saving from those with short-term objectives who could not otherwise reach the contribution limit. However, it also increases the likelihood that an incentive will exist for increased retirement saving because people will be less likely to reach the contribution limit on just their retirement saving. The net effect on saving is unclear. Furthermore, the 10 percent tax will not completely discourage use of IRAs for nonretirement uses. The gains from tax-advantaged saving can outweigh the 10 percent penalty in many cases, and in some cases the penalty can be avoided by borrowing against other assets until the IRA assets can be withdrawn.

[5] Steven F. Venti and David A. Wise, "Tax-Deferred Accounts, Constrained Choice and Estimation of Individual Saving," *Review of Economic Studies*, vol. 53 (August 1986), pp. 579-601. The study found that if the contribution limit were raised, the increased contributions would come 50 percent from increased saving, 35 percent from reduced taxes, and 15 percent from the shifting of liquid assets to IRAs.

The conclusion is highly tentative because of the limitations of the data used. In addition, the increase in savings did not appear to be related to the tax rates of individuals. The authors instead attributed the increased saving to the heavy advertising that accompanied IRA expansion in 1982. This influence is likely to be temporary.

The higher contribution limit makes it more likely that employees will receive the tax-advantaged return on additional saving. Further, any employer matching contribution greatly increases the return on plan saving. Thus, if a higher return on additional saving leads people to increase saving, salary reduction plans are more likely than IRAs to effect that increase. 6/ Quantitative estimates have not been made on the savings effect of salary reduction plans.

The Effects of Traditional Plans

In traditional plans, contributions (or benefit accruals in defined benefit plans) are specified in plan rules and, except for integration with Social Security, generally accrue at uniform rates among all employees. This uniformity, and other features of qualified plans, can influence personal saving as much as do the tax advantages.

Although individuals cannot adjust their contributions within traditional plans, the tax advantages may still affect their saving by influencing the choice of a plan's contribution rate. As shown in the following section, employers probably design their plans to meet the retirement saving preferences of their typical employees, and reduce wages to reflect their plan contribution. Further, in selecting a job, workers probably are influenced by the closeness of a firm's plan to their own saving preferences. Thus, to some extent the level of contributions in a traditional plan reflects employees' preferences for their own tax-advantaged saving.

Most employees' saving preferences will not be matched exactly by the level of saving embodied in the employer's plan. Employees who would prefer to save less may be forced to save more. Some may be able to offset the plan by reducing other saving of their own, or by borrowing more. Many will find this difficult to do, however, and the employer's prescribed contri-

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6. One difference between salary reduction plans and IRAs has an uncertain effect on saving. The loan provisions in salary reduction plans increase the willingness and ability of individuals to use them for nonretirement purposes. This effect extends the incentive to save for purposes other than retirement, which should increase saving, but it also increases the likelihood that people will reach their plan's contribution limit with the saving level they had before the plan's introduction.

bution rate will cause them to save more than they would choose to save otherwise. 7/

Employees who, in the absence of the plan, would save more than the plan contribution on their behalf will receive no tax incentive from the plan to increase their saving. They can be expected to reduce their other saving by the amount of saving done on their behalf in the plan. They may even reduce their other saving further in order to spend some of the tax advantage from their pension saving before retirement.

Other characteristics of traditional plans that may affect employees' total saving are the pressures for retirement that have traditionally accompanied retirement plans, the uncertainty of benefits, and the favorable rates on life annuities purchased through employer plans. Pressures for retirement could increase saving on the part of those who would not retire so soon otherwise, while uncertainty about plan benefits and favorable annuity rates could increase or decrease employees' saving compared with what it would be without a pension.

A number of empirical studies have been made to determine the effects of traditional plans on saving. They have found that pensions raise worker's wealth, but by less than the amount of wealth they accumulate in their pension plans. Thus workers with pensions offset a portion of their pension plan saving by reducing their other personal saving. Estimates of the size of the increase in wealth have varied considerably, with recent

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7. It can be difficult to reduce saving done for other purposes (such as for medical emergencies, unemployment, or children's education) because the saving in traditional employer plans usually will not be available before retirement. Borrowing against other assets is possible, particularly a home, but many people either do not own homes, have little equity in their homes, or are reluctant to borrow against them to offset pension accumulations they are uncertain of claiming.

Those people forced to save more than they prefer by the uniform contribution rates do not necessarily pay for their extra saving through reduced current pay. As will be explained in the next section, the burden of making these contributions may fall on other employees more interested in high saving. Nonetheless, the contributions represent saving and, unless they are offset by other dissaving by the employees, they represent an increase in national saving.

studies placing the increase for older workers at 30 cents to 40 cents per dollar of pension assets. 8/

Pension participants' greater wealth will translate into a somewhat smaller increase in after-tax retirement income because pension assets are taxed fully when paid as benefits. Had the workers not been in pension plans their assets would have been in nonqualified accounts, like savings accounts or stocks, which would be taxed partially if at all when liquidated. Thus, a 30-cent to 40-cent wealth advantage for pension participants could yield an after-tax income gain of only half or two-thirds as much. 9/

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8. For a summary of studies, see Alicia H. Munnell, "Impact of Public and Private Pension Schemes on Saving and Capital Formation," in International Social Security Association, *Conjugating Public and Private: The Case of Pensions* (Geneva: ISSA, 1987), pp. 230-232. The studies typically estimate how much pension participants reduce their nonpension wealth because of their pension wealth. Recent studies find that older workers reduce their nonpension wealth by 60 cents to 70 cents per dollar of pension wealth, which is equivalent to a 30-cent to 40-cent increase in total wealth per dollar of pension wealth.

Estimates of the the offset in non-pension wealth have varied considerably, ranging from almost nothing to at least 70 percent. Most of these studies are biased toward understating the size of the offset because they assume that persons without pensions have the same desire for retirement saving as those in pension plans. However, it has already been pointed out that people with greater desire for retirement saving are likely to choose to work at firms with pension plans. Thus, some of the greater wealth of people in pension plans may be due to their greater preference for saving, rather than to the pension plan itself.

9. An example shows the relation between differences in wealth and differences in after-tax income. Consider two older workers who are similar except that one participates in a pension. In accordance with the recent studies, assume that the pension participant has $1 of pension assets plus between 30 cents and 40 cents in other assets. The other worker has $1 of nonpension assets. Suppose the workers retire and liquidate their assets to use as retirement income. The amount of after-tax income they each have depends on their marginal tax rate and on the fraction of nonpension assets that are subject to tax. (All pension assets are taxable.) In 1983, the average marginal tax rate of pension recipients was 16 percent. Furthermore, a study cited below found that pension wealth substitutes mostly for other financial wealth, like stocks and bonds, which could owe some tax when liquidated. Assuming that one-fourth of nonpension assets are subject to taxation and that all income is taxed at 16 percent, the after-tax income of the pension participant is between $1.13 and $1.22. The nonparticipant has 96 cents. The pensioner's after-tax income is between 17 cents and 28 cents above the other worker's, or between 56 percent and 66 percent of the wealth difference. The finding that pension wealth substitutes mostly for financial wealth appears in Robert B. Avery, Gregory E. Elliehausen, and Thomas A. Gustafson, "Pensions and Social Security in Household Portfolios: Evidence from the Survey of Consumer Finances," in F. Gerald Adams and Susan M. Wachter, eds., *Savings and Capital Formation: Policy Options* (New York: Lexington Books, 1986).

An increase in after-tax retirement income of the magnitude indicated by these studies can be explained by the tax advantages of qualified plans and does not necessarily indicate higher saving by the participants. In fact, the examples outlined in Chapter I and the simulation results discussed in Chapter III, both of which assume that qualified plans do not cause any increase in individual saving rates, show larger potential increases in retirement income than do the empirical studies just mentioned. This comparison suggests that participation in qualified plans did not increase the saving rates of those the studies examined. 10/

The recent empirical studies have been limited in scope, however. In the main, they excluded workers who had little wealth outside of their plan assets, and may thus not reflect the full effect of pensions on saving. Although a relatively small number of such workers are likely to be pension participants, the effect on those who are could be substantial because they lack sufficient amounts of other assets to offset their pension saving through higher consumption. 11/

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10. By providing a higher return on saving, the tax advantages may also encourage people to work more in their younger years, build up their savings, and then retire earlier than they would otherwise. The pressures for retirement built in or accompanying many traditional employer plans may accentuate this effect. Few studies have tried to measure this bunching of the labor supply into the younger years. One has found evidence that such bunching occurs. Richard A. Ippolito, "Income Tax Policy and Lifetime Labor Supply," *Journal of Public Economics*, 26 (April 1985), pp. 327-347. The bunching would be modest, however, if the aforementioned studies are correct in finding little increased saving among pension recipients.

11. Tabulations from the 1983 *Survey of Consumer Finances* found that 27 percent of families have a net worth, outside qualified plans, of less than $3,300. When home equity is excluded from net worth, half of all families have net financial assets of $2,300 or less. While many families have significant home equity, they are not likely to encumber such equity for long periods of time merely to offset qualified plan assets. Thus, many families have insufficient assets to offset pension accumulations. Many of them would also have difficulty borrowing to offset pension accumulations because they have low incomes as well as low net worth. The information on wealth holdings comes from Robert B. Avery and Gregory E. Elliehausen, "Financial Characteristics of High-Income Families," *Federal Reserve Bulletin*, 17:3 (March 1986), p. 167, and R.B. Avery, G.E. Elliehausen, Glenn B. Canner, and Thomas A. Gustafson, "Survey of Consumer Finances, 1983," *Federal Reserve Bulletin*, 79:9 (September 1984), p. 685.

In sum, the evidence shows that qualified plans have caused participants to have more retirement income but not necessarily higher saving rates. The simulation in Chapter III is in keeping with these findings insofar as it assumes that qualified plans neither raise nor lower individuals' savings rates and that all gains from the tax advantages are used solely in the form of more consumption in the retirement years.

EFFECT ON NATIONAL SAVING

Even though qualified plans apparently cause little or no increase in individual saving rates, they result in greater gross saving for the nation as a whole. In essence, the revenue losses of the government are being saved for future retirement income. This increases net national saving if the government covers the losses by raising other taxes or by reducing spending. On the other hand, if the government meets the revenue losses through higher borrowing, then national saving, on net, is not increased. This potential match of greater retirement assets with greater government debt is particularly relevant in assessing the net effect of expanding IRAs to all employees as of 1982. The revenue loss from that expansion may well have added to the federal deficit, which mushroomed at that time. Thus, any increase in saving resulting from the expansion of IRAs needs to be offset by whatever increase in the deficit is attributed to their expansion.

WHO PAYS FOR PENSIONS?

Contributions to qualified plans by employers are an alternative to money wages as a form of compensation for the workers covered by such plans. For any particular worker, however, a dollar in the form of a plan contribution may replace more or less than a dollar of money wages. Several factors determine to what extent money wage reductions finance qualified plan contributions and their allocation among workers. The following section first outlines the basic processes by which qualified plan contributions become part of workers' compensation. It then discusses the complications added by the tax code's nondiscrimination rules and the skewing of benefits to long-service workers in defined benefit plans.

Qualified Plans as a Component of Compensation

Employers maintain pensions and other types of qualified plans as a part of their compensation structures for several reasons. First, in large enterprises that require very structured and long-term commitments from their workers, employers prefer defined benefit pensions because aspects of those plans arguably make their workers and, therefore, their firms more productive. 12/ Second, by maintaining formal retirement plans, many employers satisfy the sense of responsibility that they feel toward loyal workers. Third, some employers establish qualified plans because the workers that they wish to attract or retain appear to want such plans. Finally, in closely held businesses, the desire of employers themselves and their key managers for tax-advantaged retirement savings often determines whether plans are established.

As noted, many workers want their employers to sponsor a pension or some other form of qualified plan. For many, the higher before-tax yield of qualified plans makes them a preferred way of saving for retirement. Certain other features of traditional pension plans also make them attractive: the specified promises that employers make in defined benefit plans; the savings discipline and investment expertise provided by money purchase plans like TIAA-CREF; and the access to annuity distributions at favorable group rates offered by most pensions.

These complementary desires of employers and workers for pensions or other qualified plans sort themselves out in the labor market in several ways. Although most workers must simply accept or reject the compensation packages that their potential employers offer, workers presumably gravitate to employers whose compensation offers--including the qualified plan components (if any)--are attractive or, at least, do not strongly conflict with their career goals. Employers presumably have rearranged these offers over time in order to retain and attract the types of workers who best fit their needs. By offering similar compensation packages, employers in a given occupational specialty or job area may seem to be affording little choice to potential workers in that specialty or field. Usually, however, there is enough job mobility within an occupation, and

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12 Vesting requirements and, more importantly, the lock-in effects that exist in defined benefit plans from the effects of preretirement inflation on benefit levels, may help employers recoup training costs and keep workers during the peak productivity years. Subsidized early retirement provisions and the absence of accruals for work performed after a plan's normal retirement age then encourage workers to leave at ages in which their productivity arguably begins to decline.

substitutability among related jobs, that these standard compensation packages comport with what the majority of workers in the occupational specialty or job area are willing to accept. In some instances, pensions are the product of explicit wage negotiations--as with the large pension plans that cover most unionized hourly wage workers in the basic industries.

Moreover, a successful compensation practice in one firm tends to spread to other firms and become an industrywide practice. If its pension structure enables a particular firm to obtain better results from its workers than its competitors get for the same compensation cost, then they probably will establish similar pensions. Arguably, the workers will benefit from gains that pensions may induce, since the competing firms in the industry will use their greater profits to hire more workers or purchase more capital. In an economy at high employment, compensation in the industry will tend to rise as a result. As discussed more fully later, these increases in compensation may be reflected in the very generous benefits that defined benefit plans pay to long-service workers.

Workers--as a group--must ultimately absorb the costs of any employer-sponsored retirement plan (less any productivity increases the plan causes). To remain competitive, a firm's labor costs cannot exceed those of its competitors. 13/ Because a firm's contributions to a pension or other qualified plans are part of its labor costs, the amounts it can pay for wages or other nonwage benefits (such as employer-sponsored health insurance) are less than if it did not maintain the retirement plan. At the same time, competing firms not only must pay similar compensation to similarly skilled workers, but must also give them what they appear to want with respect to the components of their pay--that is, so much in current wages, in current nonwage income, and in deferred compensation. In sum, a firm's compensation structure must conform to the preferences of a majority of its workers.

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13. If a firm pays less than the going rate for workers of the type that it needs for its business, its products or services will suffer in quantity or quality, and it will be surpassed by its competitors. Similarly, if a firm pays more than its competitors, either the prices for its goods or services will be higher or its return to capital invested in the firm will be lower. The firm's customers and investors will begin to move their business and capital to other firms, forcing the firm either to adjust its compensation costs downward or eventually to cease operations.

Effect of the Nondiscrimination Rules

The desire for a particular qualified plan may not be uniform among the workers concerned. For those in the lower tax brackets, the tax advantages of qualified plans are relatively weak. Further, because they can expect a relatively high replacement of preretirement income from Social Security, many workers in the bottom half of the wage distribution may decide that they need little more in the way of retirement savings to maintain their current standard of living. Conversely, among higher-wage workers, the tax advantages of qualified plans are relatively attractive and the replacement-rate value of Social Security relatively small.

But preferences may differ even among workers with generally comparable wages. Some will have spouses who work and who may also be covered by pensions. Workers also differ in their asset holdings, their retirement preferences, their expectations about future earnings and job mobility, their desire for the nontax advantages of pensions, and all the other economic and psychological matters that affect an individual's or family's decisions about saving for retirement. Thus, within any group of workers, some will be relatively enthusiastic participants (or would-be participants) in a qualified plan, and some will be relatively reluctant participants (or would-be participants).

To some extent, the tax code's nondiscrimination rules--those having to do with coverage and integration--allow employers to draw distinctions about which workers they will cover, and to what degree. Thrift and salary reduction plans allow individual workers some degree of choice within the plans. Nonetheless, the nondiscrimination rules--especially in the wake of the Tax Reform Act of 1986--place fairly severe limitations on how many workers can be excluded from coverage and on the extent to which benefits or contributions may differ by income levels.

These constraints can create dilemmas for an employer trying to establish or maintain a plan when a significant number of employees--for example, lower-wage hourly workers--are unwilling to absorb the costs of the plan in the form of reduced wages. If those reluctant participants have the alternative of moving to employers who do not maintain plans and impose no such wage reductions, and if they cannot be replaced by workers willing to accept the plan and the attendant wage reductions, then the plan potentially becomes too costly.

An employer can try to compensate for resistance to wage reductions among those workers not interested in the firm's qualified plan by lowering the contributions that the firm otherwise would make on behalf of workers who are relatively enthusiastic about the plan--probably the higher-wage employees. That difference in amounts--between the pension contributions for the enthusiastic participants that would have been made in a world unconstrained by the nondiscrimination rules and those actually made--is then used to pay for the contribution costs of the more reluctant participants. This diversion of contributions makes possible a solution that does not reduce the wages of the reluctant participants, while the more enthusiastic participants--especially at the higher income levels--can still be better off in terms of potential lifetime income. Because pension contributions for the higher-wage workers will earn for them a favorable before-tax rate of return, the present value of those, albeit smaller, contributions can remain greater than a larger amount paid as current wages. This shifting of contributions from one group of workers to another has its limits, of course. Once the present value of pension contributions for enthusiastic participants becomes less than what they might receive from other employers as wages or pension contributions, they too may begin to leave the employer who is maintaining the plan.

On balance, the nondiscrimination rules probably have the following effects. First, among a firm's workers in the same general pay range and tax bracket, an implicit compromise is reached between those who desire qualified plans as part of their compensation and those who are less interested. To the extent that those who strongly favor qualified plans dominate the implicit compromise, the others are required to save more in the plan than they would otherwise unless they are able to switch employers. This situation will be especially true where employers in a given locale or occupation all make qualified plans part of their standard compensation package in a way that comports with the majority preferences of workers in that area or occupation (for example, among salaried workers).

Second, because higher-wage workers tend to favor participation in qualified plans more than lower-wage workers, some of the costs probably are redistributed away from lower-wage workers. For example, in large companies that employ workers at all wage levels, higher-wage workers probably have smaller plan contributions made on their behalf than would be the case in a less constrained world; and their lower-wage colleagues are able to escape from some or all of the costs of the contributions made on their behalf. This situation may also occur in closely held, small firms where, because of the top-heavy rules, owners and top management are effectively required to share some of their tax-advantaged rate of return in qualified plans with employees who are unwilling to incur wage reductions.

Special Allocation Issues in Defined Benefit Plans.

The foregoing analysis applies to defined contribution and defined benefit plans alike. But these two types of plans differ in one key respect: defined contribution plans skew benefits toward long-service workers. The question thus arises as to how the costs of a defined benefit plan are allocated among workers of differing tenures and ages. Three explanations have been advanced--that workers absorb the costs proportionately across their work lives, generally in line with the employer's contributions; that they absorb the costs in accord with the increasing present value of their accrued benefits; or that the plans effectively pay for themselves by making the workers and the sponsoring firm more productive.

Under the first view, workers covered in defined benefit plans incur the costs of those plans in accord with the employer's funding method--that is, the pattern of the employer's yearly contributions to the plan. To comply with one of the acceptable methods that employers must use to fund such plans, the contributions are, by design, relatively level--as a percent of workers' wages--from year to year. Accordingly, the covered workers experience more or less proportionate reductions in their wages while under the plan, regardless of their length of stay, and regardless of their ages. These proportionate reductions in wages may or may not track exactly with the employer's actual funding method, but they have the same general profile.

Under the second view, workers covered by defined benefit plans incur the costs of those plans in accord with the increasing worth of their benefits. As already seen, the year-by-year increases in the present value of a full career worker's benefits under a defined benefit plan are relatively trivial in the initial years, climb slowly in the middle years, and increase considerably in the later years. By the same token, workers hired relatively late in their lives accrue substantially larger benefits than younger workers hired at the same time. Under this second explanation, then, full career workers presumably experience minimal reductions in wages in their initial years as a consequence of coverage under the plan, somewhat larger reductions in their middle years, and very substantial reductions in their last years. Similarly, older workers entering a firm have their wage offers more substantially reduced than do younger workers.

Limited evidence indicates that the former view more accurately reflects how labor markets adjust to the costs of defined benefit plans. If long-service and older workers in firms with generous defined benefit plans were absorbing the costs of their plans in accord with the increasing present value of the accrued benefits, then their wages would decline in later years, especially as compared with workers not participating in defined benefit plans. Recent research indicates that wage profiles by age and job tenure are not markedly different for those who are participating and for those who are not. 14/ These findings are more consistent with the view that workers incur wage reductions on a proportionate basis. In that case, younger short-service workers in defined benefit plans have been systematically experiencing reductions in their wages that exceed the benefits they have been accruing. In effect, those disproportionate reductions have been used to fund benefits to older long-service workers that exceed their lifetime wage reductions. Assuming that this is correct, younger and short-service workers could have improved their situation by moving to employers that do not sponsor defined benefit plans. It is, however, difficult for any worker to predict how long he or she will remain under a given pension plan; each member of a group just starting out under a plan may believe that he will remain long enough to become a net winner, or at least break even, under the plan. In some instances, that calculation will be validated; in other instances, for any number of reasons, a worker will leave employment under a plan before that point is reached. In addition, jobs often are attractive enough in other respects to offset whatever losses a worker may be incurring in a pension plan. (For example, a younger worker may be willing to accept implicit losses in the company's pension plan in order to obtain unique on-the-job experience in that particular company.)

A third theory argues that defined benefit plans cause some enterprises--especially large companies--to be more productive than they would be otherwise, and that this extra productivity finances the comparatively large retirement benefits for workers who make long-term commitments to the firm. In this view, workers under a defined benefit plan generally receive no less in money wages (or other current compensation) than they would in the absence of the plan. Older and long-service workers receive greater total compensation in the form of generous retirement benefits, while younger and short-service workers, because of the limited value of their accrued pension benefits, receive little--a result which, according to this model, is appropriate because they did not contribute very much to the increase in the firm's long-term productivity.

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14. Richard A. Ippolito, *Pensions, Economics, and Public Policy* (Homewood, Illinois: Dow Jones-Irwin, 1986), pp. 49-51 and 57-62.

One difficulty with the proposition that defined benefit plans accurately reflect the increased productivity of long-service workers is that the age-tenure configuration in such plans depends critically on inflation, a factor that is unpredictable. As discussed earlier, by having defined benefit plans operate as a reward for longevity, workers are encouraged to stay through their peak productivity years. (Often they are encouraged to leave thereafter, through early retirement subsidies in the plan.) The strength of that longevity incentive, however, depends greatly on inflation. An employer may choose a defined benefit plan in a time of high inflation only to discover after inflation subsides that the plan's lock-in effects have become minimal. Alternatively, if inflation increases greatly, an employer may find the firm's workers more reluctant to leave at the plan's early retirement age, both because the workers wish to have their pensions based on higher wage levels and because they are worried about retiring with unindexed benefits. As a result of inflation's uncertain effects on defined benefit incentives, there is some question whether the longevity incentives of defined benefit plans really represent an attempt by employers to optimize their production processes, and if so, whether they can be effective. If the incentives for long-term employment are not effective tools for assuring more efficient production, then they cannot be generating extra profits to pay for the large benefits accruing to long-service workers.

These three conflicting views as to how costs are allocated under defined benefit plans lead to somewhat different conclusions on the equity and economic efficiency of those plans. Nevertheless, it is clear that all taxpayers--including those workers who receive little or no increases in retirement income from qualified plans--pay for the tax advantages through higher tax rates or forgone government spending. In contrast, the gains in increased retirement income, as shown by the simulation presented in Chapter III, accrue disproportionately to that subset of taxpayers who were long-service workers.

USES OF QUALIFIED PLANS FOR NONRETIREMENT PURPOSES

Pension plans are sometimes used by employees and employers for purposes other than retirement. Lump-sum disbursements can be consumed instead of saved, and employers may be able to use plan assets to finance company investment.

Nonretirement Uses by Individuals

When employees leave a plan during their working years, they may receive a lump sum equal to their accrued benefits. 15/ Until 1982, employees could also tap their assets indirectly by taking unlimited loans against them. Qualified plans have also been used as a means to accumulate large bequests with tax-favored rates of return.

These nonretirement uses of qualified plans have become a major concern to the Congress in recent years. Increasingly, it has adopted the view that the tax advantages of the plans should exist solely to promote retirement income. At the same time, the concern exists that younger employees might be unwilling to participate in qualified plans--especially plans such as 401(k)s that depend on individual employee decisions--unless they could have access to their assets in case of emergency. Consequently, in-service distributions have been restricted although they are still allowed under some circumstances in profit-sharing plans. Also, loans against qualified plan assets have been subjected to much tighter limits on their size and terms, and some distributions after the age of 70½ are now required in order to prevent assets from accumulating as bequests.

More important has been the development of an "additional income tax" to recapture at least some of the tax advantages of plan assets that are distributed before retirement. 16/ This provision originated in the context of IRAs and, by the Tax Reform Act of 1986, has been extended to all qualified plan distributions. In the future, when workers receive lump-sum payments before retirement, a 10 percent additional income tax will be imposed. This additional income tax can be avoided by putting the lump-sum payments into rollover IRAs or, if permitted, into the next employer's qualified plan. In addition, income averaging no longer will be generally available to mitigate regular tax liability on these payments.

To the extent that these provisions encourage workers to continue to shelter their qualified plan assets, the underlying policy of promoting retirement income will be advanced. To the extent that they do not, the previous tax advantages given to those asset accumulations will be recaptured when they are used for nonretirement purposes.

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15. In-service distributions are also permissible under some limited circumstances in profit-sharing and stock-bonus plans.

16. In general, the benchmark for these purposes is whether the distribution takes place before age 59½. Unless the distributions are annuity payments, most pre-59½ distributions will be subject to the 10 percent additional income tax.

Nonretirement Uses by Businesses

The Congress has also been concerned that sponsoring employers may use qualified plan assets for business purposes. Partly for this reason and partly to limit self-aggrandizement by employers acting as fiduciaries, the law since 1974 has limited the extent to which employers can invest plan assets in their own enterprises or borrow plan assets for such purposes.

Nonetheless, under current law, employers are able to use plan assets indirectly for investment in their own businesses. Under current funding practices, a plan that is acceptably funded in terms of its "ongoing" liability can be substantially overfunded in terms of its "termination" liability. [17] In these situations, an employer can terminate the plan, pay off accrued benefits to participating workers, possibly create a successor plan that meets minimum funding requirements, and use the "excess" funds from the first plan--known as reversions--for investment purposes. Because the excess funds in the qualified plan have accumulated at a tax-free rate of of return, they are greater than if the employer had been accumulating them as retained earnings in a taxable account.

In the event of a termination, workers can lose in several ways. The employer may not create a successor plan, or, if it does, the new plan may be less generous and may not give credit for service under the predecessor plan. Even if the old plan is effectively reestablished with credits for previous service, the new plan will be encumbered with significant start-up liabilities. These initial unfunded liabilities place both covered workers and the Pension Benefit Guaranty Corporation (PBGC) at considerable risk if the new plan subsequently folds.

Until recently, the Congress has been unwilling to prohibit or severely restrict such actions for fear that employers might become less willing to sponsor defined benefit plans. In order to discourage plan terminations for these purposes, however, the Tax Reform Act of 1986 imposed a 10 percent tax on reversions over and beyond an employer's regular tax liability for such amounts. This excise tax is similar in purpose to the 10 percent additional income tax discussed above. To the extent that it discourages reversions, the funding of qualified plans will be made more secure, increasing the possibility that the excess funds will be used to liberalize plan benefits. To the extent that the excise tax does not eliminate reversions, at least some of the previously given tax advantages will be recaptured by the government.

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[17] On-going liability reflects the benefits that will be paid workers on the basis of their projected salaries at retirement for all their past and future years of service. Termination liability reflects only the benefits to which workers are entitled on the basis of their current salaries for past years of service.

In addition, in early 1987 the Administration came forward with a comprehensive proposal about the funding and termination of defined benefit plans. In part, the proposal is prompted by continuing concerns about asset reversions in situations where firms then recreate their previous plans. [18] On the one hand, the proposal would allow employers with well-funded plans to withdraw assets from them, rather than having to terminate an old plan and then recreate it as a successor plan. The amounts that could be withdrawn, however, would be limited to just those assets that exceed the higher of two alternatives--either 125 percent of a plan's termination liability, or that portion of a plan's ongoing liability that has already accrued (using the projected unit credit funding method). [19] The number of withdrawals that could take place, and their aggregate amount, over any 10-year period would be limited. On the other hand, the proposal stipulates that if a firm wanted the full amount of a plan's excess assets (vis-a-vis termination liability), the firm would have to terminate all of its defined benefit plans and could not establish a new defined benefit plan for another five years.

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18. The Administration's proposal would also tighten the definition of termination liability, clarify how ERISA diversification rules apply to "floor offset" plans, allow some shifting of assets from pension plans to retiree medical benefit plans, and, most importantly, shorten the periods over which certain amounts of unfunded accrued liabilities must be amortized. This funding proposal also has a companion proposal from the PBGC concerning the insurance premiums it charges plans, especially those with unfunded liabilities. For more discussion of minimum funding standards and the liabilities of PBGC, see the forthcoming CBO paper *Federal Insurance of Private Pension Benefits*.

19. As discussed in Chapter VI, if defined benefit plans adjusted the salaries of workers for inflation between the time a plan is terminated and the plan's normal retirement age, the resulting redefinition of termination liability would be similar to the definition of accrued liability calculated under the projected unit credit method.

CHAPTER V

RECENT CHANGES IN RULES FOR QUALIFIED PLANS

The Tax Reform Act of 1986 substantially changed the rules governing qualified plans. It also changed to an even greater degree the overall tax environment in which the plans operate. This chapter surveys the specific and general ways in which the act will affect qualified plans.

PROVISIONS DIRECTLY AFFECTING QUALIFIED PLANS AND IRAS

The many rule changes for qualified plans and IRAs can be summarized under three headings: tighter limits on the amount of retirement income that can be achieved through qualified plans or IRAs; tighter bounds on the degree to which employers may make distinctions among employees in coverage or in contributions and benefits; and tighter restrictions on the use of qualified plan accumulations for purposes other than retirement income.

Tighter Limits on Retirement Savings

The act limits the amount of retirement income that can be obtained through qualified plans and IRAs in three broad ways: by limits on IRA deductions; by limits on elective deferrals in salary reduction plans; and by lower overall limits on contributions and benefits under qualified plans.

Limits on IRA Deductions. Though all taxpayers may still contribute up to $2,000 each year to an IRA ($2,250 for a combined worker and spousal IRA), starting in 1987 the current-year deductibility of those contributions will be limited among higher-income taxpayers who are participating in qualified plans. (Others who are not qualified plan participants will be able to deduct up to $2,000 or $2,250 regardless of their income.) For married couples in which at least one spouse is participating in a qualified plan, deductible IRA contributions will be phased down from $2,000 ($2,250) at $40,000 of adjusted gross income to zero at $50,000 of AGI. For single taxpayers participating in qualified plans, the comparable AGI levels will be $25,000 and $35,000. Taxpayers whose IRA deductions are fully or partially phased out will be able to make nondeductible IRA contributions up to $2,000

($2,250) and, in so doing, accumulate investment earnings on those contributions on a tax-deferred basis. The IRA contribution limits remain unindexed and, by extension, the new IRA deduction limits are not indexed.

Limits on Elective Deferrals. The act also limits the amount of wages that workers can exclude from current-year taxation by making deposits to employer-sponsored qualified salary reduction plans (that is, so-called "elective deferrals" of current wage income). In general, the limit in 1987 on elective deferrals will be $7,000; beginning in 1988, the $7,000 limit will be adjusted upward each year to reflect inflation over the preceding year. (Until such time as the indexed $7,000 limit surpasses $9,500, the limit on elective deferrals for tax-sheltered annuities sponsored by nonprofit and educational organizations will be $9,500.) Subject to other constraints, however, employees will be able to make nondeductible contributions to employer-sponsored qualified plans that exceed these deduction limits.

Though the act places an upper limit on elective deferrals, it also makes such deferral opportunities more readily available. By removing the requirement that current or accumulated profits are a necessary condition for contributions to a profit-sharing plan in a given year, it makes elective deferrals within the context of 401(k) arrangements--which technically are profit-sharing plans--more available. In addition, the act authorizes for the first time elective deferrals within Simplified Employer Pensions (SEPs), although under quite limited conditions.

Limits on Contributions and Benefits. The act places limits on the amount of overall retirement savings that upper-income employees are permitted to achieve through the medium of employer-sponsored qualified plans. Though inflation indexing of the various dollar income limits applicable to qualified plans will resume in 1988 in accord with prior law, the act continues to freeze the dollar limit on what an upper-income individual may accumulate annually under one employer as qualified defined contribution savings. That limit will remain frozen at $30,000 until it equals one-fourth (rather than one-third) of the comparable defined benefit level; at current rates of inflation, this means that the $30,000 limit will stay fixed for roughly the next 10 years. In addition, the act prohibits compensation in excess of $200,000 from being used in calculating qualified plan contributions or benefits, and it imposes a 15 percent excise tax on distributions from qualified plans and IRAs that exceed, in terms of periodic payments, $112,500 or benefits accrued as of August 1986, whichever is greater. Finally, by requiring that the defined benefit dollar limit (now $90,000) be reduced on a full actuarial basis for benefits payable before age 65, the act restricts what an employer can deduct for the funding of early retirement benefits that accrue after 1986. This last provision may affect some upper-middle-income employees as well as top management.

Tighter Bounds on Permissible Discrimination

The Tax Reform Act restricts the degree to which qualified plans may exclude different kinds of employees, delay vesting, and distinguish among employees in terms of benefits or contributions. In addition, it subjects all tax-favored saving plans, whether they are thrift plans or salary reduction plans, to uniform discrimination rules.

Beginning in 1989, a plan's coverage and plan accruals for highly compensated workers have to be more closely correlated with coverage and plan accruals for other workers. As is the case now, a plan will qualify either if it covers certain stipulated fractions of the sponsoring employer's workers, or, failing that, if it covers a particular class of the employer's workers in a manner that does not discriminate in favor of highly compensated employees, according to standards set forth in regulations. The stipulated fractions are generally similar to those in prior law. 1/ Unlike prior law, however, a plan covering a select class of workers will qualify only if, in addition to satisfying the condition that the class is a representative cross-section of all the employer's workers, the average value of plan accruals for all of the employer's non-highly compensated workers, expressed as a percentage of pay, is 70 percent of the comparable average value for all of the employer's highly compensated workers (the "average benefit" test). Because uncovered workers receive, by definition, no benefits from a plan, they will enter into the average benefit calculations for the two groups at zero value. Hence, a large number of uncovered non-highly compensated workers will disqualify a plan. In addition, though an employer may combine plans for purposes of qualifying them under the tests just described or, instead, choose to apply those tests separately among different lines of business, the act also imposes a new requirement that any one of an employer's plans must cover at least 50 of that employer's workers (or, in situations where an employer's total work force is less than 125, 40 percent of the workers).

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1. Under the two fraction tests, an employer's plan will qualify if it covers at least 70 percent of the non-highly compensated workers (the "percentage" test), or if the percentage of non-highly compensated workers covered by the plan is at least 70 percent of the comparable fraction for the highly compensated (the "ratio" test).

The act limits employer latitude with respect to vesting schedules. In the future, workers must vest in qualified plans no later than after five years of service (or seven years in case of a graded vesting schedule). Under prior law, employers had a choice among 10-year vesting, 15-year graded vesting, or a schedule that combined age and years of service.

The act codifies, and also tightens, existing principles that govern the extent to which Social Security may be taken into account in computing either contributions to, or benefits payable from, qualified plans. In general, a year's increase in a worker's benefit under a defined benefit plan for wages above the integration level cannot exceed twice the increase in plan benefits for wages below that level or, if smaller, the increase in Social Security benefits attributable to the employer share of the payroll tax for wages below the integration level. 2/ Similarly, a defined contribution plan's contribution rate for wages above the integration level cannot exceed twice its contribution rate for wages below that level or, if smaller, that rate plus the employer payroll tax for the Social Security cash programs (now 5.7 percent).

Finally, the act specifies some nondiscrimination rules applicable to virtually all types of employer-sponsored tax-favored saving plans--salary reduction plans and traditional thrift plans alike. 3/ When employee before-tax deferrals and after-tax contributions are combined with employer matching and certain nonelective contributions, the resulting amounts among the highly compensated cannot exceed, beyond certain bounds specified in the tax code, comparable amounts among the non-highly compensated. 4/ Because of these constraints on deposits and contributions

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2. For defined benefit plans, the act deems that the employer half of the Social Security payroll tax finances a retirement benefit that equals, in the case of a 35-year career worker, 26.5 percent of that worker's average wages below the Social Security wage base (prorated to 0.75 percent for any one year's wages below the wage base).

3. Elective deferrals to 403(b) tax-sheltered annuity plans are exempt from the "average deferral percentage" (ADP) ratio test. The sponsoring employer, however, must make the opportunity to make elective deferrals to tax-sheltered annuities generally available to all employees. Further, any employer- matching matching or nonelective contributions to tax-sheltered annuity plans must comply with the ADP test.

4. In general, the ratio rules for thrift and salary reduction plans are as follows: in situations where the average percent for the non-highly compensated is below 2 percent, the average percent for the highly compensated cannot be more than two times that figure. In situations where the average percent for the non-highly compensated is between 2 percent and 10 percent, the comparable average percent for the highly compensated can be two percentage points higher. Finally, in situations where the

to tax-favored saving plans, the act rel~~axes~~ coverage requirements for these plans: all workers eligible to participate in such a plan, whether or not they do, will be treated as covered workers for purposes of the coverage tests discussed earlier.

Tighter Restrictions on Using Qualified Plan Assets for Nonretirement Purposes

As discussed more fully in Chapter IV, the act has generalized the principle, first legislated for IRAs, that when taxpayers use qualified plan assets for nonretirement purposes, they should repay the Treasury some portion of the tax advantages that were previously accumulated within those assets. In the case of individuals, beginning in 1987, a 10 percent additional income tax must be paid on qualified plan distributions used for nonretirement income purposes (with the exception of medical expenses). 5/ In some instances, this 10 percent additional tax will fall short of the accumulated tax advantages and will constitute only a partial repayment; in other instances, it will be greater than those advantages and will represent a penalty tax on premature withdrawals. Similarly, when an employer terminates a plan and excess assets revert to the company, it will owe a 10 percent excise tax on the amount of the reversions. These new 10 percent taxes are in addition to the normal liability taxpayers owe for these amounts.

In addition, to discourage wealthy individuals from using qualified plans and IRAs as tax-favored vehicles to build up large bequests, the act has generalized another IRA provision to apply to all qualified plans. In the future, to the extent that any plan does not distribute a requisite amount to a participant who has recently become age 70½, a 50 percent excise tax will be imposed on that amount.

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average percent for the non-highly compensated is greater than 10 percent, the average percent for the highly compensated can exceed that figure by a factor of 1.25. A group's percentage is computed as the average of the percentages for employees in the group, including zero percentages for those not contributing. In the case of elective deferrals in SEPs, however, the 1.25 factor applies in all situations and operates as a limit in individual cases.

5. Retirement is defined as the earliest of the following events: regardless of age, when disability occurs or when annuity payments first begin; a plan's early retirement age if that age is 55 or older; or age 59½.

The act also restricts hardship withdrawals of elective deferrals in 401(k) and other salary reduction plans in cases where the worker is still an active participant in the plan. In the future, such withdrawals will be limited to the past amounts of elective deferrals; any investment earnings attributable to those withdrawals must stay in the plan. As with a preretirement cash-out of an IRA, however, hardship withdrawals of the elective deferrals, unless for qualified medical expenses, will be subject to the 10 percent additional income tax outlined earlier. The act also restricts participant loans from qualified plans more than did prior law.

Summary of Direct Changes

The Tax Reform Act of 1986 continues some trends in public policy toward qualified plans that have emerged in the past five years, partly in response to continuing budget deficits and partly in response to the growing aggregate value of the tax advantages of qualified plans.

First, as just discussed, the act emphasizes the use of qualified plan accumulations for retirement income purposes, rather than for preretirement or bequest purposes. Where accumulations are not being used for retirement, the various recapture taxes will recoup some of the previously lost revenues for the Treasury.

Second, the ability of relatively well-to-do people to accumulate large amounts of retirement income on a tax-favored basis has been further restricted. The effective income limits are generally lower for those types of plans that allow more individual flexibility. The greater the degree of individual flexibility, the lower down in the income distribution the limits are drawn. For example, the new limits on IRAs apply to those in the upper middle class and will become increasingly meaningful over time as wage growth carries more people above the nonindexed income limits. Though the new limit on elective deferrals is indexed and generally less binding than the limits on IRA deductions, it did not exist under prior law, and it will make large amounts of retirement savings less possible through salary reduction arrangements compared with completely nondiscretionary pension or profit-sharing plans. The restrictions on nondiscretionary plans cut in at the highest income levels. Generally, annual benefits in excess of $112,500--among the top 1 percent to 2 percent of those who have earnings above that level--are discouraged.

Third, by imposing new coverage tests, faster minimum vesting schedules, tighter integration rules, and new discrimination rules for salary reduction and thrift plans, the act strengthens the policy objective expressed in ERISA, in the top-heavy rules of TEFRA, and in the changes made by REA. According to this policy goal, the payments from, and tax advantages of, qualified plans should be more evenly distributed by income, job tenure, and similar criteria. In particular, the Congress has reinforced the emphasis it placed on benefit outcomes in the TEFRA top-heavy rules. This emphasis can be seen in the new average benefit ratio test for qualified plans in general and in the average percentage test for tax-favored savings plans in particular. The new integration rules also limit the disparities in qualified plans that can exist by reason of Social Security and represent a more deliberate attempt to correlate Social Security and qualified plans in order to produce certain combined payment results.

Estimates of the effects of these direct changes on the distribution of probable outcomes from qualified plans do not yet exist. Thus, one cannot say precisely how the revised law would affect the simulation of future retirement income presented in Chapter III. The new vesting rules, however, have been estimated to increase plan costs by only about 2 percent to 7 percent (about 0.03 percent of annual compensation, on average). 6/ This relatively small increase suggests that the new rules will have little effect on the typical employee's lifetime pension benefits and, therefore, on employee gains in retirement income from the associated tax advantages. Relatively small gains are especially likely in defined benefit plans where preretirement inflation will continue to render most of the newly vested benefits among short-service workers a nullity. 7/ Though no comparable estimates for the new coverage and integration rules yet exist, their effects in the aggregate are not likely to be very large. Few major plans now exceed the coverage and integration bounds that the act codifies, and the top-heavy rules legislated in TEFRA have already eliminated what were previously the most skewed plans among small and medium-sized employers.

As will be shown later, a potential conflict may exist between this renewed emphasis on a more even distribution of plan benefits and the new tax rate structure.

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6. See Employee Benefit Research Institute, *Issue Brief*, no. 51 (February 1986), p.1.

7. As was shown in the example in Chapter III, the change from 10-year to 5-year vesting in the case of an individual with two jobs--the first for 9 years, the second for 31 years--has only a minor effect on the individual's eventual replacement rate, raising it by only 2.4 percentage points, assuming 3 percent inflation.

STRUCTURAL CHANGES IN THE INCOME TAX AFFECTING QUALIFIED PLANS

The Tax Reform Act of 1986 made significant structural changes in income tax rates and interest deductibility. This section examines the implications of those changes for the formation and maintenance of qualified plans.

Revised Tax Rate Structure

The act replaces the current multibracket tax rate structure with a simplified one that has two broad brackets of 15 percent and 28 percent. [8] By itself, this probably will not alter the basic demand for qualified retirement plans. CBO's tabulations indicate that marginal rates on wages and salaries will be reduced by only five percentage points or less for most taxpayers (about 97 percent of taxpayers). Among the 3 percent whose earnings exceed $75,000, marginal rates will be reduced an average of eleven percentage points. For those upper-income individuals, saving through qualified plans will nonetheless continue to generate a better rate of return than any other alternative.

But the lower tax rate structure for the upper-income population means that one of the sources from which redistribution in qualified plans is financed has been shrunk. A smaller differential between tax-favored rates of return in qualified plans and taxable rates of return means that there will be less available to maintain the money wages paid to workers who resist any reductions in their wages to pay for contributions to qualified plans, along the lines discussed in Chapter IV. In addition, the ability of the well-to-do to escape the redistribution requirements imposed by the qualification rules has, as shown earlier, been narrowed by both the Tax Reform Act and the top-heavy rules legislated earlier in TEFRA.

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[8] Beginning in 1988, for married couples, the 15 percent rate will apply to taxable income under $29,700 and the 28 percent rate will apply to taxable income in excess of that amount. For single filers and head-of-household filers, the comparable breaks between the two brackets will be $17,850 and $23,900 respectively. For married couples with taxable income above $71,900, single filers above $43,150, and head-of-household filers above $61,650, the benefit of the interior 15 percent bracket (that is, 13 percent times $29,700, $61,650, or $17,850) and the value of their personal exemptions will be phased out at a 5 percent surcharge rate. Thus, taxpayers above those levels will face an effective 33 percent tax rate until the phase-outs are complete. Taxpayers who do not itemize will pay taxes if their adjusted gross incomes do not exceed the sum of their standard deductions and personal exemptions. Some examples of the resulting tax-exempt levels are: $4,950 for a single filer; $8,900 for a nonelderly married couple with no dependents; $12,800 for a nonelderly married couple with two dependent children; and $10,250 for a nonelderly head of household with two dependent children. Tax-exempt levels for elderly or blind taxpayers will be higher by $1,200 in the case of married couples or by $750 in the case of single and head-of-household filers. Taxpayers with dependent children who are eligible for the Earned Income Tax Credit will have higher tax-exempt levels than those illustrated here.

The combined effect of these changes--less financing available for any redistribution of the costs of contributions to qualified plans, and tighter nondiscrimination rules--will partly depend on the employment context. Large plans exist mainly in response to a demand among the rank and file (often expressed through their unions) and, quite possibly, because of the production requirements of employers. These plans generally are not very discriminatory under current law and probably contain relatively little redistribution of burden from upper- to lower-income workers. On balance, tax reform probably will not affect the formation and continuation of these plans to any great extent. 9/

Among medium- and smaller-sized employers, tax reform may have different effects. If, as generally thought to be the case, the collective demand for qualified plans is weaker in these settings, the typical employee will be less willing to absorb reductions in current income to finance these plans. Because of the nondiscrimination rules, owners and upper-income management must share some of the gains from the tax advantages of qualified plans with reluctant savers among the rank and file. By reducing the gains available to finance additional compensation of lower-paid workers

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9. Lower section 415 limits, particularly in light of the requirement in the Tax Reform Act of 1986 for strict actuarial reductions in the defined benefit limit for early retirement, could throw increasingly large numbers of middle-management and even highly skilled hourly workers into unfunded non-qualified "excess benefit" plans. Though this result may be appropriate from a revenue or tax equity perspective, it conflicts with the objective of ERISA to assure that retirement plans are securely financed. To compromise these conflicting objectives, it may be necessary to create a new legal creature in the interstices of the Code and ERISA--funded excess benefit plans that do not raise constructive receipt problems once the worker vests but in which the investment income of the funds is taxed at, say, the 28 percent rate. Provisions in the tax code governing the funding of post-retirement medical benefits providesomething of a model for such an arrangement. Employer deductions for contributions would have to be delayed until payment in order for the government not to suffer revenue losses on a cash-flow basis. It is possible, however, that the new tax rate structure and other changes made by the Tax Reform Act of 1986 have so lessened the attractiveness of nonqualified plans from a tax perspective that they will generally disappear.

and at the same time making it more difficult to exclude those workers or limit benefits going to them, the act changes the incentives for the formation and maintenance of qualified plans. One likely response is that fewer traditional pension plans--with their fixed employer commitments--will be established in settings where the rank-and-file demand for retirement savings is weak. Some existing plans may be closed down.

Because thrift and salary reduction plans allow rank-and-file workers to sort themselves according to their saving preferences, such plans may become increasingly attractive in settings where the demand among the rank-and-file for retirement income is not very uniform. In fact, the new provisions making elective deferrals in SEPs and profit-sharing plans more readily available may help spread these arrangements. Even here, however, the act's tighter constraints--more stringent average percentage rules, the $7,000 limit on elective deferrals, the narrow strictures on the use of elective deferrals in SEPs--make formation of such saving plans less attractive to owners and management. When faced with a great many reluctant participants, the small employer may simply resort to some private saving plan--for example, private deferred annuity contracts--and abandon any attempt to sponsor a qualified plan of any sort.

Limits on Interest Deductibility

The act limits interest deductions to no more than a taxpayer's income from investments and to interest on mortgages that do not exceed their bases in two residences (in general, the original purchase price of the residence plus the cost of improvements). [10] Because of these changes, individuals in qualified plans will be less able to use their participation in such plans merely to reduce their lifetime taxes.

As mentioned in Chapter IV, a taxpayer can borrow money and use it to generate tax-free rates of return in a qualified plan, and then pay back the loan with equivalent proceeds from the plan. Though the taxpayer in this situation has no net gain in assets, he is able to reduce his taxable income over his lifetime by the amount of his interest deductions for the loan. Without interest deductibilty, this tax reduction strategy is not possible. The relatively open-ended nature of interest deductions for mortgages leaves open, however, the opportunity to engage in such behavior, although to a lesser degree than formerly.

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10. Taxpayers are allowed to deduct interest on mortgage or home equity loans that exceed their basis in their residences if the proceeds from those loans are used for medical expenses or college expenses.

CHAPTER VI

THE SIZE AND DISTRIBUTION OF GAINS FROM QUALIFIED PLANS:

OPTIONS FOR FURTHER LEGISLATION

As previous chapters have shown, the tax advantages of qualified plans make possible large overall gains in retirement income. The gains, however, are unevenly distributed. Projections suggest that about half of the extra income from the tax advantages of present plans will go to those in the top quartile of the income distribution, and over 70 percent to those in the top half. The projections show even larger disparities in the gains between workers with 20 or more years under one plan and those with shorter tenures. Yet all workers pay for the tax advantages of qualified plans through higher tax rates or forgone public services. Policies to reduce the disparities in gains might therefore be considered. In addition, providing boosts in retirement income and incentives for increased saving--however equitably distributed--are not, of course, the sole, or even foremost, purposes of government. Those objectives must be weighed against other imperatives and values such as national defense and international commitments, competing domestic needs, and the present problem of large federal deficits. In light of these other objectives, it could be argued that the government ought to scale back its subsidies for retirement, especially among those higher in the income distribution.

This chapter examines some additional measures that the Congress might wish to consider should it decide to make further changes in the tax advantages of qualified plans, particularly in the size and distribution of those advantages.

THE PRESENT DISTRIBUTION OF GAINS SEEN IN CONTEXT

The skewed distribution of gains from qualified plans must be seen in perspective. First, it reflects the underlying distribution of pension and profit-sharing payments, and the earnings on which they are based. Since the top quartile of employees receives more than half of all employment income in the economy, it is not surprising that retirement income based on earnings is similarly distributed. Second, higher earners encounter higher tax rates so that, by definition, the tax advantages of qualified plans are more valuable to them.

Third, and most important, the Social Security system--payments from which are about two and one-half times as large as those from qualified plans--does much to compensate for the vertical skewing in the distribution of the tax advantages under the plans. Generally speaking, most of the subsidies in Social Security redound to workers in the bottom quartile who receive the least from qualified plans. By the same token, most of the net losses in Social Security are borne by those in the top quartile who receive the most from qualified plans. If the net losses and gains of Social Security were counted along with the gains from qualified plans, the result might well show that government policies are producing relatively proportional increases in retirement incomes, on average, in any given earnings class.

Social Security does not, however, compensate for the horizontal skewing within each income class toward long-service workers. Although most workers will be participants in a qualified plan during some period of their working lives, only about half of full-time workers are covered by qualified plans at any given moment, a participation rate which has changed little over the last 15 years or so. For the long-service worker with 20 or more years under one plan, the retirement income gains associated with the tax advantages are considerable--projected to be anywhere from 18 percent to 30 percent of retirement income absent the preferences. In contrast, however, the gains for those who fail to achieve 20 years under a single plan are much less--only one-fourth to one-half as large under the same projection. For single people without long service under one qualified plan, the retirement income gains from the tax advantages are projected as virtually nonexistent, a conclusion that has particular impact for women and minorities. This job tenure skewing in qualified plans has three basic causes: plan rules in the areas of coverage, vesting, and integration; the failure of many employers to sponsor qualified plans of any sort; and the erosion of the real value of deferred annuities payable from defined benefit plans among workers who change jobs several times over their lives.

The Congress has repeatedly addressed the first cause. Over the past several years, it has reduced the extent to which plan rules can discriminate among employees. But because of the other two causes, the overall effect of these changes has likely been small. If a worker is not covered by a plan, changes in permissible plan rules have no meaning for him or her. Similarly, although stricter rules as to coverage, vesting, and integration will allow more participants some new benefits, the value of those benefits will be worth little unless earned relatively late in a worker's life.

The second cause of job tenure skewing--the fact that many employers do not sponsor qualified plans--has led some to propose that all employers and employees be required to participate in qualified pension plans. 1/ Such proposals raise questions such as whether enlarging the Social Security system might be preferable to establishing mandatory pensions; whether workers who change jobs several times would still be at a disadvantage under defined benefit plans; and what ought to be the role of government in insuring defined contribution deposits against investment and inflation risks. These questions involve retirement policy issues that are generally beyond the scope of tax issues discussed in this paper. (One proposal, that salary reduction plans be made more widely available, is discussed below.)

The third cause--the effects of job changing on outcomes from defined benefit plans--has not received much attention. And yet, because well over half of all participants in qualified plans are covered by defined benefit plans, which account for most of the benefit dollars, this factor probably has more to do with qualified plan outcomes than any other. Unless the rules for calculating defined benefit annuities, particularly with respect to preretirement inflation, are modified to take account of job changing, little can be gained from making further changes in the rules for covering, vesting, and integration. 2/

The following section examines five measures that would address the policy issues just discussed. The first two measures would decrease the tax advantages and, therefore, the revenue losses associated with qualified plans. The Congress might wish to consider such measures for several

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1. A proposal for a mandatory pension tier was put forward in 1979 by the President's Commission on Pension Policy. It would require that each employer place an amount equal to 3 percent of most employees' wages or salaries into qualified money purchase pension (defined contribution) accounts. An employer could maintain an additional qualified plan (or plans) if he or she wished to do so. See President's Commission on Pension Policy, *Coming of Age: Toward a National Retirement Income Policy* (February 26, 1981). A similar proposal has also been debated in the United Kingdom. See the While Paper *Reform of Social Security: Programme for Action* (London: Her Majesty's Stationery Office, Cmnd. 9691, December 1985), and the predecessor Green Paper *Reform of Social Security* in three volumes, Cmnd. 9517-19 (June 1985).

2. CBO estimates that for plans using entry-age normal cost financing, a further decrease in the permissible vesting period from five years to one year would raise aggregate annual plan costs by at most 3 percent. This estimate assumes a 4 percent annual inflation rate.

reasons: to compensate for revenue losses associated with other proposals to increase access to, or change the results from, qualified retirement plans; to finance increased spending on those elderly people who receive the least benefit from the combination of Social Security and qualified plans; or to achieve nonretirement objectives such as a lower deficit, a further lowering of tax rates, or increases in other spending programs.

Two other measures would alter the distribution of the tax advantages of qualified plans, either by changing the way defined benefits are calculated or by broadening access to tax-favored savings.

A final measure would involve increased public spending to help those who benefit least under the combination of Social Security and qualified retirement plans.

MEASURES TO REDUCE REVENUE LOSSES FROM QUALIFIED PLANS

The tax advantages and revenue losses of qualified plans have two origins: earnings on which tax liability is deferred until retirement, and their tax-free buildup in qualified plans. Each of these sources accrues mainly to those in the upper half of the income distribution. Measures to curtail the amount of earnings that can be deferred tend to affect only those at the very top of the income distribution. In contrast, a measure to tax, to some degree, the investment earnings of qualified plans and IRAs would have a broader impact.

Either approach would probably result in less retirement income for the upper half of the population. Such people would be likely to compensate by retiring later in their lives, although some might continue to retire relatively early and accept a lower standard of living in retirement. 3/ Less well-paid employees might also lose retirement income, since most of the managerial decisions are made by upper-income people, who, if qualified plans became less attractive, might be less inclined to sponsor the plans.

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3. As discussed in Chapter IV, evidence as to the effect of the tax advantages of qualified plans on saving rates is inconclusive. It is possible that, faced with the prospect of less retirement income gains in qualified plans, some people might save more. In that case, the effects of curtailing the tax advantages of qualified plans would be a lower after-tax standard of living during their working years.

Reduce Allowable Contributions to Qualified Plans

There is no obvious salary limit beyond which the government should not subsidize the acquisition of retirement income; nor is there any similar limit to the percentage of annual pay that ought to go into tax-favored plans. 4/ The Social Security wage base, however, probably represents an income level below which a cutback in qualified plan limits would be regarded as unreasonable. That wage base covers about 90 percent of all earnings in the country, so a cutback to that level would remove only the top 10 percent of earnings from qualified plan subsidies. The wage base is estimated to be $45,000 in 1988; this limit could be applied to defined benefit plan accruals beginning in 1988. A proportionate cutback in the defined contribution plan limit would be to $15,000 in 1988. Alternatively, the limits could be cut back to amounts that are between current law limits and the Social Security wage base; for example, $67,500 for defined benefit plans and $22,500 for defined contribution plans.

In addition, the amounts that can be set aside for any one individual in qualified plans could be cut back: as a percentage of final compensation in the case of defined benefit plans, and as a percentage of current pay in the case of defined contribution plans. A cutback in the percentage of pay that can be devoted to defined contribution plans to less than 15 percent would make it difficult for even prudent savers in the middle class to acquire, through qualified plans, retirement income sufficient to maintain previous living standards. Similarly, a cutback below 67 percent in the amount of final pay that defined benefit plans can replace would make it difficult for middle-class workers to achieve full replacement of their preretirement income. Alternatively, these limits could be raised to intermediate levels, such as 80 percent of final pay in the case of defined benefit plans and 20 percent of current pay in the case of defined contribution plans.

Table 26 presents some of these alternatives for reducing contributions and benefits, and shows how such reductions would affect federal revenues. 5/ The defined benefits limits of $45,000 or $67,500 would in-

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4. See footnote 9 in Chapter V for a discussion of the potential conflict between lower contribution limits and the funding objective of ERISA.

5. Because of data constraints, it was not possible to estimate the effects of lowering the percent of final pay that a defined benefit plan can replace or the percent of current pay that can be devoted to a defined contribution plan.

TABLE 26. REVENUE GAIN FROM LOWER SECTION 415 LIMITS (In billions of dollars)

	1988	1989	1990	1991	1992
Dollar Limits for DC Plans of $22,500 and DB Limit Equal to 1.5 percent of Social Security Wage Base	0.2	0.6	0.6	0.7	0.8
Dollar Limits for DC Plans of $15,000 and DB Limit Equal to Social Security Wage Base	0.9	2.5	2.8	3.2	3.6

SOURCE: Congressional Budget Office.

crease according to increases in the Social Security wage base. The defined contribution (DC) limit, however, would be frozen at $15,000 or $22,500 until it is eventually cut back from one-third of the defined benefit (DB) limit to one-fourth, as the 1986 tax act provides. The revenue increases shown are for the five-year period 1988-1992.

Limit Tax-Free Investment Income in Qualified Plans

Another way to reduce the tax advantages of qualified plans would be to impose a special income tax on the investment income accumulating in qualified plan trusts or annuity contracts and in IRA accounts--for example, a special income tax rate of 5 percent. 6/ For those in the 15 percent bracket, some 34 percent to 39 percent of the tax advantages would be eliminated, while only some 16 percent to 24 percent would be eliminated

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6. In general, no credit or other offset for these taxes on the investment income of plans would be allowed against the taxes paid by the recipients of those distributions. As was demonstrated in Chapter I, most taxes paid on distributions are the postponed taxes on the original before-tax contributions. The calculation of the exclusion ratio under section 72, however, might have to be modified in order to avoid double taxation of the investment income earned by after-tax contributions.

for those in the 28 percent and 33 percent brackets. A tax rate greater than 5 percent would even more substantially decrease the value of tax advantages for employees in the 15 percent tax bracket compared with those in the 28 percent and 33 percent brackets. A 5 percent tax, therefore, probably represents an upper bound for a special tax of this type. A tax rate higher than 5 percent would also affect seriously the long-term interest rate assumptions in most qualified plan funding formulas. Table 27 shows the revenue effects of a 5 percent and a 2 percent tax rate. Because a tax of this type would have a greater effect on people in the 15 percent bracket than those in the 28 percent bracket, it might be desirable to accompany it with a cutback in the Section 415 limits. As before, the revenue estimates are for the five-year period 1988 to 1992.

TABLE 27. REVENUE GAIN FROM TAXING ASSET INCOME OF QUALIFIED PLANS (In billions of dollars)

	Fiscal Years				
	1988	1989	1990	1991	1991
Dollar Limits for DB Plans of $90,000 and DC Plans of $30,000					
2 percent tax rate	0.9	1.4	1.5	1.6	1.7
5 percent tax rate	2.1	3.6	3.7	3.9	4.1
Dollar Limits for DB Plans of $67,000 and DC Plans of $22,500					
2 percent tax rate	1.1	2.0	2.1	2.3	2.5
5 percent tax rate	2.3	4.2	4.3	4.6	4.9

SOURCE: Congressional Budget Office.

MEASURES TO PROTECT JOB CHANGERS

The tax advantages of qualified plans are disproportionately enjoyed by workers who stay under one plan for most of their working lives. This distribution may be a desirable compensation strategy for many employers, and society may benefit from it in terms of long-term commitments from workers to their firms and, consequently, increased national output. But it is questionable whether the income tax should subsidize, to the degree it does now, longevity rewards through the medium of defined benefit plans whose primary public purpose is to provide retirement income. Further, much of the skewing in defined benefit outcomes results from inflation, which is quite beyond the control and prediction of employers or workers.

Most workers are restricted in their choice of qualified plans to what their employers provide. Short-service workers and job changers generally cannot compensate for their comparative disadvantage in qualified plans by engaging in fully comparable tax-advantaged savings on their own. Workers whose employers have no qualified plan are at a similar, often greater disadvantage.

Two measures could address these disparities: eliminating inflation as a factor in the calculation of defined benefit deferred annuities; and further expanding access to qualified saving plans for uncovered workers and job changers. Before describing these alternatives, their major disadvantages are worth noting. First, they are potentially expensive and probably more disruptive of settled practices in qualified plans than anything else that the Congress has legislated, with the possible exception of the funding and fiduciary rules in ERISA. Second, they could seriously affect the labor markets by increasing job mobility, with uncertain effects on output and labor-management relations. On the other hand, many argue that the United States, now faced with increasing competition in the world economy, needs to encourage job mobility. These measures would arguably assist that end.

Require Inflation Indexing in Defined Benefit Deferred Annuity Calculations

Under this proposal, the tax code would be amended to require that defined benefit plans adjust the salaries on which they calculate deferred annuities for inflation between the time workers separate from a plan until they are first entitled to draw an annuity. 7/ (A deferred annuity is one that is owed a former worker who separates before retirement, once he or she reaches the plan's normal retirement age. In contrast, an immediate annuity is one that begins payments to a worker on leaving the plan at retirement.) Inflation indexing could apply either to all separated employees who are vested or to some narrower set of vested employees. By definition, it would apply to all workers in the event their plan was terminated.

To avoid requiring adjustments that exceed what separated workers would have received had they stayed with the firm, the increase in the index could be limited to price growth over the relevant period or to growth in the average of the firm's wages for workers covered by the plan, whichever was smaller. Similarly, to avoid requiring adjustments that exceed a plan's financial capacity, the index could also be limited to a measure of the plan's investment performance over the relevant time period, if that was lower. 8/

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7. In theory, a case can be made for requiring that the salaries of separated workers be adjusted for wage growth rather than prices alone. A wage index would eliminate virtually all differences in defined benefit outcomes between long- and short-service workers. Wage indexing, however, would require deciding whether the appropriate index should be society-wide (such as the Social Security wage index), firm-specific, or some combination of the two. In addition, if the relatively unpredictable factor of inflation were washed out of deferred annuity calculations, the remaining factor, real wage growth, would be more predictable and, therefore, more subject to explicit and rational bargaining between employers and workers. By the same token, therefore, additional governmental constraints about the remaining element--real wage growth--would become less necessary.

8 In addition, if the federal government were to require the indexing of salaries in final-pay defined benefit plans, employers might insist on having available a relatively riskless means of funding their deferred annuity liabilities. Short-term government notes would probably satisfy that demand. There have been periods, however, in which inflation has outstripped the return on short-term government bonds. If the government were to issue indexed bonds--that is, bonds whose rate of return is inflation plus a stipulated real interest rate--the demand could be satisfied under any circumstances.

Indexed bonds could also serve several other purposes relevant to retirement policy. First, for defined contribution plan participants, indexed bonds would provide a preretirement inflation-proof investment medium. Second, for defined benefit plans, defined contribution plans, or IRA holders, indexed bonds would provide a means to finance postretirement annuities with cost-of-living adjustments. Third, the availability of indexed bonds alone might lead some employers on a voluntary basis to provide deferred annuities based on indexed final salaries. For a recent discussion of indexed bonds, see Alicia H. Munnell and Joseph B. Grolnic, "Should the U.S. Government Issue Index Bonds," *New England Economic Review* (Sept.-Oct. 1986).

Presumably, plans would still be allowed to cash out deferred annuities whose present (or lump-sum) value fell below a particular dollar amount (currently $3,500). Such present value calculations would, however, necessarily be discounting the deferred annuity by the plan's real interest rate assumption, rather than, as now, its nominal interest rate assumption. 9/

Requiring that plans index salaries in their calculations would not affect their liabilities for normal retirement benefits--that is, the amounts a plan estimates it will pay workers who retire upon leaving employment under the plan. Liabilities for deferred annuities--that is, the amounts a plan must pay employees who leave employment under the plan sometime before the plan's usual retirement age--would increase by significant amounts. CBO estimates that annual costs for plans using entry-age normal cost financing would increase anywhere from 6 percent to 28 percent if those plans also had five-year vesting. These costs roughly equal 0.6 percent to 2.8 percent of annual compensation. If indexed deferred annuities were restricted to those with 10 years of service, the cost increase would be smaller--a 4 percent to 19 percent increase in annual plan costs, or amounts roughly equal to 0.4 percent to 1.9 percent of annual compensation. From one perspective, these costs may be viewed as relatively small--roughly equal to one year's typical wage increase. From another perspective, the costs may be viewed as large; if the increased costs were borne by workers entirely in reduced money wages, then some 0.4 percent to 2.8 percent of their lifetime compensation would be permanently shifted from current income to retirement benefits.

Alternatively, however, employers sponsoring defined benefit plans could compensate for these increased deferred annuity liabilities by eliminating or decreasing subsidized early retirement benefits, or by decreasing the benefit accrual factor in their plan formulas. If salaries in defined benefit calculations were indexed, subsidized early retirement benefits would be less necessary to motivate workers to leave beyond a particular age. To the extent that benefit accrual factors were reduced while aggregate costs were kept constant, there would be a redistribution of

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9. Allowing lump-sum cash-outs would still leave workers somewhat at risk with respect to future inflation. If inflation turned out to be greater than what was assumed in the cash-out calculation, a worker receiving a preretirement lump-sum distribution would receive less than if, instead, he had been able to leave his accrued rights in the plan and received a deferred annuity. Conversely, if inflation turned out to be less than assumed in the the cash-out calculation, the plan would have paid more in present value terms as a lump sum than as a deferred annuity.

retirement income benefits away from long-service to short-service workers. Alternatively, the increased costs could be passed back to employees in the form of lower current compensation, some of which would be borne by short-service workers.

The employee lock-in effects now produced by defined benefit plans would be curtailed, though not entirely, under a system of price-indexed deferred annuities. Short-service workers and job changers would still lose the value of real wage growth in the calculation of their deferred annuities. On the other hand, workers would be somewhat more likely to move among employers, and, as a consequence, employers might find it less advantageous to invest in training and specialized equipment. To compensate, employers could provide explicit longevity incentives (for example, 20-year bonuses) or require that employees sign agreements to pay back the value of explicit schooling when they leave before a stipulated time period. These alternatives would tie productivity incentives less to retirement income, and would not involve tax subsidies.

Because present plans have not been funded with the expectation that they will pay deferred annuities on the basis of indexed salaries, imposing such a requirement for previous service could be very disruptive, even for plans with substantial reserves. Thus, any such requirement probably would have to be limited to accruals for future service under defined benefit plans. In addition, if retroactively applied, such a requirement would increase the federal government's exposure for pension liabilities insured through the Pension Benefit Guaranty Corporation.

The revenue consequences of this option are highly uncertain because one cannot be sure how employers might try to compensate for a requirement that they index final salaries in deferred annuity calculations in defined benefit plans. If all the costs of this change were borne by workers in the form of lower wage compensation, then the government would lose revenues on that fraction of compensation (anywhere from 0.4 percent to 2.8 percent) that shifted from being taxable to being nontaxable. That would constitute the upper bound of possible revenue losses. If the change was accommodated by a decrease in other aspects of the pension plan or other nontaxable compensation, then there would be no revenue losses.

The Congress could compensate for any negative revenue consequences of this proposal by curtailing Section 415 limits or imposing a minimum tax on the investment income of qualified plans, as discussed above. The revenue costs requirement would then be broadly borne by all plan participants, including those who were gaining the most from the indexing change.

Increase Access to Tax-Favored Retirement Saving

Another way of addressing the comparative disadvantages of short-service workers would be to increase their access to tax-favored saving independent of their employers. This increased access would also aid those not covered by a qualified plan of any sort. In theory, complete equality of access would be achieved if all workers could have IRAs up to, for example, the defined contribution limit of 25 percent of earnings or $30,000. 10/ A system of retirement savings along those lines, however, would not accommodate other objectives that the Congress sought to advance when it imposed conditions on qualified plans. Existing law, however, provides two models--salary reduction agreements and income-conditioned IRAs--that would increase independent access within the general framework of these other policy objectives. 11/

Salary reduction plans are similar to IRAs in that workers determine for themselves how much to put aside. Salary reduction agreements ("elective deferrals") are, however, subject to a special set of nondiscrimination rules and to the Section 415 rules that limit how much any one person can save on a tax-favored basis. 12/

To make tax-favored savings universally available within the overall framework of these rules, the federal government could require employers to give their workers the opportunity to execute salary reduction agreements. To comply, an employer would only have to offer his workers the option; as now, he would not be required to offer either matching or nonelective employer contributions. Because of the limits the law imposes

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10. For discussion of the merits of an unfettered large-scale IRA, see Richard A. Ippolito, *Economics and Public Policy* (Homewood, Illinois: Dow Jones-Irwin, 1986), chap. 12.

11. Both of these alternatives rely on the defined contribution approach to retirement savings with its accompanying investment and inflation risks to individual participants. The availability of government indexed bonds would, however, provide participants with a risk-free means to invest such savings. See footnote 8 for more discussion of indexed bonds.

12. There is one exception: in the nonprofit sector, employee elective deferrals are not constrained by these rules. See Chapter V, footnote 3.

on the deferrals of the highly compensated, however, without employer-matching contributions to encourage rank-and-file participation, the deferral opportunities for those at the upper end could be very limited. Consequently, as under current law, the highly compensated would be encouraged to persuade their employers to induce higher savings among the rank and file through matching contributions.

To further encourage matching contributions under universally available salary reduction agreements, the Congress could end IRAs, both deductible and nondeductible. The highly compensated would then be even more strongly motivated to persuade their employers to offer matching contributions. In addition, repeal of IRAs would offset the revenue losses from making salary reduction agreements generally available.

Requiring all employers to offer salary reduction agreements would be relatively unintrusive, especially when compared with such options as a mandatory minimum pension system. Nonetheless, it could bring with it some of the overhead costs and fiduciary duties that ERISA imposes on any qualified plan. 13/ Under current law, however, the administrative costs of qualified plans may be charged against employee accounts. ERISA also offers other options, such as self-directed accounts for each employee that could be used by employers to minimize their fiduciary exposure. In addition, banks, mutual funds, and other financial institutions have become increasingly willing to absorb the administrative and fiduciary costs of IRAs, Keoghs, and salary reduction plans. This trend would probably continue in a world in which salary reduction plans were universally available (and IRAs were limited).

A somewhat different approach, that would not necessitate any involvement by employers, would be to extend deductible IRAs from the current $2,000/$2,250 limits to, for example, the lesser of $7,000 or 25

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13. A policy alternative that this paper does not address is a proposal to create centralized pension managers (or clearinghouses) for small business plans along the lines of the current TIAA-CREF system for employees of universities and similar institutions. One such proposal (Retirement USA) would authorize designated financial institutions to create megaplans into which small employers would contribute monies for their employees according to authorized formulas. Each employee would have his own account within such a megaplan. These institutions would invest these contributions and would assume the various reporting, disclosure, and fiduciary duties required by ERISA, thus keeping overhead costs for small employers at a minimum. By their nature, these proposals use the defined contribution approach to retirement savings.

percent of employment income, subject to the same phase-outs legislated in the Tax Reform Act of 1986. Unlike current law, however, this proposed $7,000 limit for deductible contributions, and the phase-out level for the deduction, would be indexed for inflation beginning in 1988. At the same time, nondeductible IRAs would be repealed. Under these circumstances, those with incomes greater than $40,000 to $50,000 (couples) and $25,000 to $35,000 (singles) would be strongly motivated to have their employers establish salary reduction plans with matching contributions. Otherwise they would have no independent access to tax-favored saving, and without matching contributions their colleagues below the IRA phase-out levels would have no incentive to participate in the salary reduction plans instead of saving solely through IRAs.

Short-service workers would be helped by either of those approaches. So would people working for employers--particularly small employers--who sponsor no other qualified plan, or whose plans offer relatively small benefits. Similarly, employees who are excluded from pension plan participation by coverage and vesting requirements could make more adequate provision for retirement on the same tax basis as those who are covered and vested. The same would be true for workers covered and vested in defined benefit pension plans but whose accrued benefits are very small. Younger and short-service employees could use salary reduction agreements (or larger income-conditioned IRAs) to hedge more effectively against the low probabilities of receiving much of value from their pension plans. 14/

A CBO estimate of the net revenue loss of universal salary reduction agreements and no IRAs appears in Table 28. The revenue loss from larger income-conditioned IRAs would be no greater and probably less. In addition, if the Congress wished to create more independent access to tax-favored saving on a completely revenue-neutral basis, either of these proposals could be accompanied by other offsetting measures--such as those described earlier that would lower Section 415 limits or impose a minimum tax on the

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14. The federal government has recently enacted a new pension system that will afford its employees such opportunities. In addition to coverage under Social Security and a conventional defined benefit plan, new federal employees will be able to put aside, on a before-tax or salary reduction basis, 10 percent of their salaries into one of three "thrift plan" investment pools. The first 5 percent of a worker's salary reductions will be matched by a contribution from the employer agency. Thus, younger federal employees or middle-aged individuals who view their likely tenure with the federal government as limited will be able to accrue substantial retirement benefits through the thrift plan and thereby compensate for the low present value of their defined benefit rights.

investment income of qualified plans. Such a package would reduce the tax advantages for those who now benefit most from them, while increasing access for those who now receive the least from them.

Recent developments suggest that the United States may be moving rapidly toward nearly universal salary reduction agreements anyway. The Tax Reform Act of 1986 made it easier to create such arrangements by removing some impediments in the case of 401(k) plans and by authorizing salary reduction agreements in SEPs, although on a very limited basis. Since the act also eliminated deductible IRAs for those at the top end of the income distribution, financial institutions now have a stronger incentive to market no-load salary reduction plans to small employers and their workers.

Increase Direct Spending on the Relatively Disadvantaged

Lower-income workers in general, and single people--the never-married and divorced--receive the least from qualified plans, in terms of payments and, especially, tax advantages. The fact that women workers and divorced wives are heavily represented in these groups does much to explain the relatively low incomes of single women in their old age. 15/ Qualified plans would have to be made mandatory in virtually all employment settings and be regulated even more than they are now in order to help low-income workers and women otherwise at risk. The government could, however,

TABLE 28 NET REVENUE LOSS FROM UNIVERSAL SALARY REDUCTION PLANS AND NO IRAs (By fiscal years, in billions of dollars)

1988	1989	1990	1991	1992
1.3	2.3	2.8	3.3	3.9

SOURCE: Congressional Budget Office.

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15. An issue that is not well reflected in the data presented in Chapters II and III is the economic status of surviving spouses--especially widows. Because women usually outlive their husbands, they also often outlive the value of the assets that they and their husbands have accumulated for retirement, especially when

(continued)

increase the retirement income of these groups by changes in the Social Security and Supplemental Security Income (SSI) programs.

To finance such increases in Social Security or SSI outlays, the Congress could curtail the tax advantages of qualified plans along the lines discussed earlier (that is, reduce section 415 limits or place a tax on the investment income of qualified plans). Increases in the SSI program could be directly financed by the income tax revenues generated by these base-broadening measures. In the case of Social Security the additional revenues in the income tax could be used to reduce income tax rates, thus allowing a commensurate increase in the payroll tax rate to pay for increased Social Security costs without drawing upon general revenues.

The following discussion briefly outlines some illustrative proposals to increase benefits going to lower-income elderly people. Any number of other alternatives are possible.

Increase Social Security Benefits by a Uniform Amount. If the tax advantages of qualified plans were curtailed by lowering the contribution limits to levels tied to the Social Security wage base and by imposing a 5 percent special income tax on their investment income, then roughly $6 billion more could be made available in 1989 for spending in the Social Security program. That amount could be used to increase benefits paid to divorced spouses or to those retired workers (and their survivors) with the lowest wage histories. These ends could be accomplished either through substantial structural changes in the program (such as earnings sharing or a two-tier structure that combines a flat dollar amount with an earnings-

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15. (continued)
they live into their eighties. As a result, many widows become poor or near-poor in those advanced years. A variety of measures have been proposed for changes in Social Security to ameliorate this situation. In addition, in the area of qualified plans, the conditions for a qualified joint-and-survivor annuity could be revised to reserve more of the annuity stream for the surviving spouse. These measures address, however, an issue that is not directly relevant to size and distribution of the tax advantages of qualified plans among workers; therefore, they are not examined in this paper. Note, however, that both of the spending alternatives discussed here--an increase either in Social Security or in the SSI basic benefit level--would assist older women in these circumstances. For more information about this issue and alternatives to address it, see Congressional Budget Office, *Earnings Sharing Options for the Social Security System* (January 1986); Department of Health and Human Services, *Report on Earnings Sharing Implementation Study* (January 1985); and the various studies and reports discussed in Appendix B of the latter report.

related benefit) or by incremental revisions of the program's current benefit formula and structure. Full discussion of such options is beyond the scope of this paper. [16]

Increases in Social Security benefits probably would redound only to those low-income households in which the primary earner had a long attachment to the labor force; unlike the SSI alternative discussed below, this would not help elderly low-income singles and couples who had no past labor force attachment. Some argue, however, that long-term low-wage workers should not have to be means-tested in order to have an adequate income in retirement; in this view, it would be preferable to increase the incomes of the low-income elderly through the Social Security system rather than through increases in the SSI program.

Increase the Federal Minimum in the Supplemental Security Income Program. Alternatively, the $6 billion (or less) that could be raised by limiting the tax advantages of qualified plans could be used to increase the federal basic benefit level in the SSI program to the poverty level or to extend that program's initial age of eligibility to age 62. [17] Implementing both measures in the SSI program would cost no more than $6 billion in 1989, assuming that Medicaid eligibility was not also lowered to age 62.

Unlike increases in the Social Security programs, however, increases in the SSI benefit level would go to all the low-income elderly, regardless of their past attachment to the labor force. This distribution would be appropriate if the primary policy goal was to reduce poverty in a very targeted way. But it would include more people than those within the usual scope of policy concern of qualified plans and Social Security.

It should be noted that increases in the SSI basic benefit level and the Social Security program are not mutually exclusive. If undertaken together, the increased benefits in Social Security would decrease the amount of extra benefits provided through the SSI program. Increasing benefit levels in both programs would minimize the concern that long-service workers not be means-tested and would extend coverage to a broader population in poverty. The cost, however, would be higher than making changes in one program alone.

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[16] See, for example, the studies cited in footnote 15 and in the publication of the 1979 Social Security Advisory Council, *Social Security Financing and Benefits* (December 1979).

[17] Some of those between 62 and 65 are now on the SSI rolls because they are disabled.

APPENDIXES

APPENDIX A

THE ORIGIN AND EVOLUTION OF TAX ADVANTAGES FOR RETIREMENT SAVING

Tax advantages for retirement saving were first granted to employer pensions in the 1920s. The advantages were not extended to personal retirement saving until 1962, and even then did not become widely available until 1982.

EARLY TRENDS IN PENSION COVERAGE

Formal pension plans in the United States began in the nineteenth century. The American Express Company started the first employer plan in 1875, followed by the Baltimore and Ohio Railroad in 1880. By 1900 a few banks and public utilities had plans. Employer plans burgeoned in the first two decades of the 20th century among railroads, public utilities, and large manufacturing firms, particularly in the oil and steel industries. Several unions, especially in the railroad and construction industries, started formal plans before 1920. During the 1920s, the growth of employer plans slowed and shifted to smaller firms. Union plans, however, continued to expand. 1/

Private pensions emerged during this period as a response to changing family ties and business structures. Urbanization was weakening the extended family that had formerly supported those too old to work. Also, the number of elderly persons was growing rapidly as earlier immigrants aged and life spans increased.

Large corporations needed systematic and publicly acceptable ways of removing elderly workers. Pensions offered a solution to this problem and at the same time provided an incentive for younger employees to work

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1. The source for much of this section is Murray W. Latimer, *Industrial Pension Systems* (New York: Industrial Relations Counselors, Inc., 1932), pp. 17-61; and Latimer, *Trade Union Pension Systems* (New York: Industrial Relations Counselors, Inc., 1932), pp. 1-36.

steadily and compliantly. Public acceptability was probably another motivation, because pensions were most common where government oversight was strongest--in railroads, public utilities, and the largest industrial combines. Also, since these firms were more financially secure than smaller firms in more competitive industries (at least until the Depression), these companies could better afford to offer pensions.

By 1929, employer plans covered up to 15 percent of private employees. Coverage was concentrated in railroads (80 percent), public utilities (50 percent), the cable, telephone, and telegraph industry (90 percent), and to a lesser extent in manufacturing (less than 12 percent). Employer plans in construction, mining, sales, and most services were essentially nonexistent. 2/ By 1930, union pensions had spread to over a dozen national unions, primarily in construction, railroads, and printing, and covered one-fifth of all unionized workers. 3/

The income tax enacted in 1913 made no special provision for employer or individual retirement funding. In the first year of operation, though, the Internal Revenue Service ruled that pensions paid to retired employees were deductible, like wages, as an ordinary and necessary business expense. 4/ Rulings in 1918 and later also allowed employers to deduct contributions to pension trust funds. These contributions had to be declared as taxable income by someone in the year contributed, however; they were assigned to employees, the trust, or to employers, depending on who had control over the funds and on the certainty of obtaining benefits. 5/ Trust earnings were similarly taxable in the year earned. In cases where trust contributions and earnings were taxable to employees, beneficiaries would not be taxed on withdrawals from a fund during retirement, just as if the trust had been personal saving. Employee contributions to retirement trusts, even if required by the employer, were not deductible.

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2. Latimer, *Industrial Pension Systems*, p. 55.

3. Latimer, *Trade Union Pension Systems*, pp. 27-32.

4. Treasury Decision 2090, issued December 14, 1914.

5. Jacob Mertens, Jr., *The Law of Federal Income Taxation*, vol. 4A, 1979 rev. (Wilmette, Illinois: Callaghan, 1979), Sec. 25 B.02, p.5.

The 1920s

The Revenue Act of 1921 included the first provision exempting employer-funded trusts from tax, but it applied only to stock-bonus or profit-sharing plans.[6] Pension trusts were not included in the exemption until the Revenue Act of 1926. After the 1926 act, employers could fund in tax-free trusts their currently accruing pension liabilities, but contributions to cover past service accruals were not allowed. Since many plans were new and most had never been fully funded, firms had large liabilities from past years' accruals. Some began accumulating taxable reserves for these obligations on their corporate balance sheets. By 1928, at least 20 percent of the non-railroad plans were supported by such reserves.[7] In response to these accumulations, the Revenue Act of 1928 permitted "reasonable" contributions to pension trusts beyond the amounts needed for currently accruing liabilities.[8] Passage of the 1928 Revenue Act completed important pension legislation for a decade.

The Revenue Acts of 1921 and 1926 were major, controversial tax bills, but the Congress paid scant attention to the sections granting tax exemptions to employer benefit trusts. The 1921 provision was inserted by

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6. Revenue Act of 1921, ch. 136, sec. 219(f). Stock-bonus and profit-sharing plans were seen at the time primarily as a means to motivate job performance. Promoting all-purpose saving was seen as a secondary goal. Employers typically would set up trusts that held company stock for the employees. Employees would earn title to the shares by a combination of their own contributions, collection of dividends by the trust, and employer contributions. The dividends and frequently the employer's contribution depended on the profitability of the firm. Employees quitting before paying in full usually forfeited ownership of the stock and a portion of the dividends and employer contributions. Participation could also be revoked for striking or other behavior disapproved of by the employer. Employee stock ownership, and this installment purchase system, were thought to encourage conscientious work, stability of employment, and a cooperative attitude. Plans with some form of trust existed in the 1880s and became more popular after 1900. During passage of the trust tax exemption, employee enrollment in stock-bonus plans was low but rapidly growing: 338,888 employees subscribed to stock purchases between 1918 and 1925. See Boris Emmet, *Profit Sharing in the United States*, Bulletin 208 of the U.S. Bureau of Labor Statistics (1917), pp. 85-157; Nicholas Paine Gilman, *Profit Sharing Between Employer and Employee*(Freeport, N.Y.: Books for Libraries Press, 1889, reprinted 1971), pp. 296-360; and Gorton James and others, *Profit Sharing and Stock Ownership for Employees* (New York: Harper and Bros., 1926), p. 24.

7. Latimer, *Industrial Pension Systems*, p. 582.

8. Latimer, *Industrial Pension Systems*, pp. 661-662. See also Revenue Act of 1928, ch. 852, sec. 23(g).

the Senate Finance Committee and accepted as uncontroversial on the floor. The 1926 extension to pensions was offered as a floor amendment in the Senate only hours before passage and was also accepted without debate. Clearly, the Congress did not foresee how costly and influential the exemption would later become. In fact, the absence of floor debate or discussion in committee reports makes it unclear whether the exemption was intended as assistance to employers' nascent benefit plans or purely as a technical resolution of the difficult problem of assigning trust income to a taxable entity. The absence of restrictions on the use of the exemption is striking by today's standards. No minimum funding requirement or any maximum benefit limit was imposed. 9/ Further, the employer could take back funds as it felt necessary, limit eligibility in any way desired, and alter or terminate the plan at any time.

As broad as the tax exemption became in the 1920s, it had little influence on the development of employer pensions before World War II. In the 1920s, only 1 percent of the population paid any income tax, and rates were 8 percent or less for many of those who paid. Corporate rates were only 12 percent to 13 percent. As late as 1939, just 5 percent of the population paid income tax and those with moderate incomes still paid only 8 percent. In 1939, the maximum corporate tax rate was only 18 percent. 10/ With rates so low, employees gained little, as compared with private saving, from employer contributions to trusts. Moreover, employers saved little on their contributions as compared with the taxes due on higher profits.

The 1930s

During the Depression, corporate incomes plunged and bankruptcies were common. Firms responded by cutting their pension contributions. Because

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9. Employer contributions were deductible as ordinary and necessary expenses under Section 23, as referenced in footnote 4. Section 23 (a) contains the phrase, "including a reasonable allowance for salaries or other compensation for personal service actually rendered, . . ." This phrase was not intended as a maximum on contributions when legislated in 1919, but by the 1940s was ruled to imply a maximum. See Rainard B. Robbins, *The Impact of Taxes on Industrial Pensions* (New York: Industrial Relations Counselors, 1949), pp. 16-19.

10. Percentages paying the tax are from Richard Goode, *The Individual Income Tax* (Washington, D.C.: Brookings, 1976), p. 4. Tax rates are from *Annual Tax Rates, 1913 to 1940*, "Extract from the Annual Report of the Treasury on the State of Finances for the Fiscal Year 1940" (Government Printing Office, 1941), pp. 466-473.

of the extensive use of current funding, this cutback necessitated sharp reductions in benefits even for those already retired. Many firms terminated their plans. Union membership also declined dramatically, thereby reducing the contributions available to pay union pensions; in the course of a few years, almost all union plans had collapsed. 11/

The Depression's economic damage to aging workers and the retired went beyond the loss of employer pensions. Personal savings were wiped out by the collapse of financial markets, the plunge in home and farm prices, and extended unemployment. Struggling families were hard pressed to support already retired family members.

To fill the breach caused by the collapse of existing old age supports, the federal government established Social Security and the Railroad Retirement System in 1935. The railroad pensions were singled out for rescue because their pension obligations were so large relative to the railroads' ability to pay and because so many people were involved. One-quarter of the railroads' work force, or 250,000 people, were near retirement. The Railroad Retirement System made good on the companies' pension promises with federal funds, and set up a continuing pension system intended to be funded by employers and employees.

The Social Security System extended retirement support far beyond those previously covered by private pensions, using an employer-employee funding mechanism like that of the Railroad Retirement System. Both systems, of course, had to start with current funding, but they were to accumulate trust funds. Since the Depression, the federal government has thus provided a minimum level of retirement income for most elderly Americans.

Some employer pension plans survived the Depression. As the economy slowly revived in the latter half of the 1930s, new pension plans were started. At the end of 1938, about 500 plans were active, up from about 400 in 1929. In spite of the rise in the number of plans, only about half as many workers were covered in 1938 as had been in 1929 before the collapse. 12/

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11. William C. Greenough and Francis P. King, *Pension Plans and Public Policy* (New York: Columbia University Press, 1956), p. 41.

12. Robbins, *Impact of Taxes on Employer Pension Plans*, pp. 27-28; and Latimer, *Industrial Pension Systems*, p. 55.

The revival of employer plans in the late 1930s brought the first suggestions for controlling use of the tax exemption. In 1937, the Joint Committee on Tax Evasion and Avoidance noted the possibility of using pension trusts to avoid taxes. 13/ The committee included in its hearing a statement from the Internal Revenue Service recommending that firms using the trust exemption (1) be restricted from recapturing earlier contributions to pension trusts, (2) be required to include a reasonable number of employees in the plans, and (3) be limited in the size of pension that could be funded. Response to the first suggestion came in the Revenue Act of 1938. It required that employer contributions to an exempt trust could not be revoked until all liabilities of the plan had been paid. Until 1938, firms could shelter profits from taxation by contributing to pension trusts when profits were positive and withdrawing those funds when profits were negative. Action on the second suggestion came in 1942, but the third had to wait until 1974.

POSTWAR LEGISLATIVE HISTORY

The war effort created strong incentives for the expansion of employer pensions. To finance the war, income taxes were sharply increased and an excess profits tax was added. Only 5 percent of the population had paid income taxes in 1939; by 1946, 75 percent paid them. Corporations were paying up to 80 percent of their profits in tax. As a result, the pension trust tax exemption became much more valuable to a broad cross-section of the population. Further, wage controls limited pay increases but not pension benefits. Thus, during World War II businesses were able to use pensions as a major incentive to attract workers, and pensions grew rapidly. While only 515 plans existed in 1938, by 1946 there were about 7,000 of them covering about 3.3 million employees.

The 1940s

The Congress recognized that high wartime taxes greatly increased the value of the pension trust tax exemption. Because of the need for revenue to pay for the war, it could well have eliminated the exemption. Instead, in the Revenue Act of 1942, it chose to keep the incentive for pensions, but to impose conditions designed to insure that pension benefits were extended to rank-and-file workers. Section 165 of the code was amended so that to qualify for the tax exemption a pension plan could not discriminate in favor

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13. Robbins, *Impact of Taxes on Employer Pension Plans*, pp. 27-28.

of officers, shareholders, supervisors, or highly paid employees in terms of coverage, contributions, or benefits. Generally, plans had to cover at least 70 percent or a "fair cross section" of employees, and could not provide proportionately greater benefits for higher-income employees. An important exception was that plans could integrate with Social Security, meaning that the ratio of benefits to earnings paid for earnings above the Social Security earnings base could be somewhat larger than the ratio for earnings below the wage base. The act also amended Section 23(p) to restrict tax avoidance through overfunding of plan liabilities. The concepts and basic conditions set forth in the 1942 act still apply today.

After the war, pension growth temporarily slowed, but the continued high tax rates and strong interest in pensions by employees, especially by organized labor, spurred rapid pension growth in the late 1940s and through the 1950s. In 1946, the United Mine Workers of America won an employer-funded pension that was jointly administered by the union and the mine owners. This set a modern precedent that was followed by other multiemployer plans in the building trades, trucking, and elsewhere. Section 302 of the Taft-Hartley Act, in response to the mining industry plan, established guidelines for collectively-bargained multiemployer plans. 14/ Then, in 1948, the United Steel Workers succeeded in forcing Inland Steel to include pensions in contract bargaining. Single-employer plans were later expanded or added in the steel and auto industries, setting a precedent for single-employer plans in related industries.

The 1950s and 1960s

Private pension plans covered 9.8 million workers in 1950, or 22.5 percent of the private work force. The rate of coverage grew rapidly during the 1950s, increasing to 37.2 percent in 1960. Coverage grew more slowly during the 1960s, increasing to 42.1 percent in 1970, but pension plan assets continued to grow rapidly. By 1970 pension assets totaled $137 billion, compared with only $12 billion in 1950. Legislative concern during this period centered mainly on curbing abuses in the management of plan assets and expanding pension coverage to the self-employed.

The explosive growth of plan assets was accompanied by enough cases of fund mismanagement and abuse to bring federal intervention. The Welfare and Pension Plans Disclosure Act of 1958 provided for registration, reporting, and disclosure of the financial operations of welfare and pension

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14. The Labor Management Relations Act of 1947, 61 Stat. 136, Public Law 80-101.

plans, in the hope that if the law forced more complete disclosure, beneficiaries would act to curb abuses. Experience with the 1958 act appeared unsatisfactory, and in 1962 amendments were added granting the Secretary of Labor enforcement powers. Kickbacks, embezzlement, and false statements on required documents were declared felonies.

The Self-Employed Individuals Tax Retirement Act of 1962 first allowed self-employed persons to establish and maintain pension plans. Previously, participation in tax-qualified plans had been limited to employees. The act laid down rules for qualified pension plans for self-employed persons, unincorporated small businesses, farmers, professional people, and their employees. These plans became known as Keogh plans, after their House sponsor. The act amended prior law on plan enrollment, distributions, and management to allow for the special case of self-employed individuals. Safeguards against discrimination were also included.

ERISA

In the 1960s, public concern mounted that workers could not count on pension benefits even after many years of service. The concern led the Congress and the Executive Branch to consider comprehensive federal standards for employer pensions. Twelve years of effort culminated in the passage of the Employee Retirement Income Security Act of 1974. ERISA greatly expanded protections for participants in employer plans and created individual retirement accounts (IRAs) for those whose employers offered no plan.

Provisions for employer plans included minimum standards for participation, vesting, and funding. Also, responsibilities for the handling of plan assets were detailed, and the Pension Benefit Guaranty Corporation (PBGC) was created to insure the benefits of employees in defined benefit plans against plan termination.

Under the act, plans could not set a minimum age for participation of over 25 years of age nor a minimum service requirement of more than one year. One of three minimum vesting standards had to be met, the most commonly chosen of these being full vesting at 10 years of service. Employers were also required to fund their plans' supplemental liabilities over specified times. Previously, only the interest on these liabilities had to be funded.

ERISA set a limit for the first time on the annual benefit for which any individual may be funded. Under a defined benefit plan, the maximum allowed was the lesser of $75,000 (subject to cost-of-living adjustments) or 100 percent of the employee's highest three-year average pay. Under a defined contribution plan, the maximum allowed was the lesser of $25,000 (cost-of-living-adjusted) or 25 percent of compensation.

ERISA also broadened the use of and raised the funding limits for individual retirement vehicles. Self-employed individuals with Keogh plans were now allowed to deduct the lesser of 15 percent of their earned income or $7,500 per year. In addition, employees not covered by a qualified or governmental plan or a tax-deferred annuity were permitted to establish individual retirement saving plans with the same deferral of tax on their contributions and investment earnings as Keogh plans. A maximum limit was set on contributions at 15 percent of annual compensation, but no greater than $1,500.

Legislation Since ERISA

Since ERISA, legislation has tried to limit new excesses in use of the trust tax exemption and at the same time support the evolution of many alternatives to the basic pension. These alternatives include expanded IRAs, special tax incentives for Employee Stock Ownership Plans (ESOPs), salary reduction plans, and so-called cafeteria plans.

All major tax legislation since ERISA has contained some provisions affecting tax-favored asset accumulation. The Tax Reduction Act of 1975 instituted a tax credit for Employee Stock Ownership Plans (ESOPs). 15/ The credit was an add-on to the investment tax credit enacted at that time. Firms taking the investment credit could claim an additional 1 percent

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15. ESOPs are trusts set up by the employer to hold stock of the firm for employees. Stock-bonus plans, along with profit-sharing plans, have existed since the late 1800s and were the beneficiaries of the original employer trust exemption in 1921. Pensions were not included under this exemption until 1926. Stock-ownership and profit-sharing plans were originally thought of as work incentives. Employees with an ownership stake in the firm might be motivated to assist the general well-being of the firm rather than focusing more narrowly on their own job security and pay. However, profit-sharing and stock-bonus plans have provided for asset accumulation that can be used for retirement, and some firms have relied exclusively on such plans for retirement.

credit for the value of company stock contributed to an ESOP. By setting the credit equal to the value of the stock donated, the government essentially bought the stock and gave it to the plans. The ESOP credit was scheduled to expire in two years but was extended and modified several times. The credit was repealed as of the end of 1986, although some other special incentives for ESOPs were added in 1984 and 1986.

The Tax Reform Act of 1976 extended ESOPs and continued the liberalization of individual retirement arrangements begun in 1962 and 1974. The 1976 act first authorized an IRA for nonworking spouses. The annual dollar contribution limit was $250 in excess of the individual account limit of $1,500. In no case could the total contribution exceed 15 percent of compensation.

The Revenue Act of 1978 boosted three innovative benefit plans. Under Section 401(k), the act allowed an employee to defer portions of his or her regular salary in tax-deferred accounts. These accounts were like IRAs in that the individual could elect amounts to place in the plans (up to plan limits), and avoid all taxes until funds were withdrawn. The funds generally could be held until retirement, though they could be borrowed against or withdrawn in certain circumstances. Nondiscrimination rules were included to prevent the tax deferral from benefiting only the highly compensated employees.

Employers had long offered savings plans to employees, and many of these had matching employer contributions. Employers with tax-qualified plans could deduct their matching contributions, but the employee contributions were taxable. Many of these plans are switching to Section 401(k) plans to avoid tax on the employee contribution, and other employers without thrift plans are starting 401(k) plans because of the more attractive tax treatment.

A second innovative vehicle boosted by the 1978 act was the "cafeteria" or flexible benefit plan. Cafeteria plans allowed employees to select their own mix of fringe benefits including medical plans, life insurance, and many others, but among the retirement savings vehicles only 401(k) plans are included. Cafeteria plans are also spreading rapidly and can affect tax-deferred retirement saving by increasing the availability and use of 401(k) plans.

The Revenue Act of 1978 also created the Simplified Employee Pension (SEP). Following ERISA, many small employers without their own pension plans had started contributing directly to employee IRAs. The act formalized this mechanism as a SEP and raised the maximum SEP contribution to $7,000 from the $1,500 IRA limit. SEPs cannot discriminate in favor of highly compensated employees, and SEP accounts are fully vested. SEPs have not spread as rapidly as 401(k) and cafeteria plans. These latter plans largely substitute for other plans already offered by employers, whereas SEPs are more likely to be started by employers without other employee retirement plans.

Legislation in 1980 attempted to repair flaws in ERISA's termination insurance for multiemployer plans. The ERISA provisions threatened the continuation of multiemployer plans and could have left the Pension Benefit Guaranty Corporation with extensive underfunded liabilities. The Multiemployer Pension Plan Amendments Act of 1980 attempted to preserve the plans and place the insurance on a sound basis.

The Economic Recovery Tax Act of 1981 (ERTA) contained the largest tax cuts in the nation's history. It also extended IRAs to all workers (under the age of 70½) and increased the annual deduction limit for IRA contributions to $2,000 per employee (plus $250 for a spouse without earnings). In addition, employees making voluntary contributions to qualified plans, tax-sheltered annuity programs, or government plans were allowed deductions for their contributions, but such deductions must be included within the IRA limit.

As a result of the changes in ERTA, use of IRAs ballooned. In 1976, just after ERISA first permitted IRAs, 1.8 million people contributed to IRAs. IRAs then grew slowly until enactment of ERTA, reaching 3.4 million in 1981. After the ERTA changes went into effect, the number of tax returns claiming IRA deductions jumped to 12.1 million in 1982 and 13.7 million in 1983.

ERTA also raised the deduction limit for employer contributions to defined contribution H.R. 10 plans (Keogh plans), defined contribution plans maintained by subchapter S corporations (partnerships), and SEPs to $15,000. The 15 percent compensation limit was not changed.

In the face of large deficits, the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) offset some of the tax reductions of ERTA. Instead of general rate increases, TEFRA focused on many small adjustment and compliance changes. For pensions, several perceived excesses of the pension tax deferral were curtailed. The maximum funding and contribution ceilings were reduced, new "top-heavy" restrictions were imposed, and several other plan options were limited. On the other hand, the distinctions between plans for the self-employed and other plans were abolished, thus liberalizing the rules for these Keogh plans.

ERISA had established the first dollar funding limit for a defined benefit plan at a $75,000 pension in 1974, and the first contribution limit for a defined contribution plan at $25,000. Both limits were indexed and by 1982 had risen to $136,425 and $45,475 respectively. TEFRA reduced these to $90,000 and $30,000, and froze further indexing until 1986. The limits were extended to SEPs, which doubled their past limits. Thus, between 1974 and 1982, the Congress had reduced real dollar funding limits on employer pensions at the same time it was expanding alternative retirement arrangements and raising their contribution ceilings.

Chief among the other pension restrictions imposed by TEFRA were the rules for so-called top-heavy plans. Plans that provided more than 60 percent of their benefits to key employees were termed top-heavy. To qualify for the tax exemption, these plans had to (1) limit the amount of a participant's compensation that may be taken into account, (2) provide greater portability of benefits for non-key participants by requiring more rapid vesting, (3) provide minimum nonintegrated contributions or benefits for non-key employee participants, and (4) reduce the aggregate limit on contributions and benefits for certain key employees.

The Social Security Amendments Act of 1983 declared that amounts deferred in 401(k) and other salary reduction plans would be considered compensation for payroll tax purposes.

The Tax Reform Act of 1984 was another attempt to reduce the large federal deficit through minor adjustments. For pensions and individual saving plans the result was to draw the Congress deeper into their operational detail without raising significant revenues. The freeze initiated in TEFRA on indexing the maximum funding and contribution limits was extended from 1986 to 1988. Changes were made in the timing of distributions from plans, in top-heavy plans, SEPs, 401(k) plans, cafeteria plans, and ESOPs.

The Retirement Equity Act of 1984 was primarily intended to protect pension-plan coverage of women, both as spouses and employees. Under this act, for spouses, qualified plans must give married employees joint and survivor annuities that can only be waived (in favor of an individual annuity or a lump sum) by a statement of the spouse signed in front of a plan representative. Further, a preretirement survivor annuity must be provided to the spouse of any vested employee if the employee dies before retirement. To protect employees who interrupt work careers for child raising, the latest age of participation, set in ERISA at 25 years, was lowered to 21, and allowable breaks in service were liberalized. Several other specific changes were made such as raising the benefit accruals that can be cashed out, and permitting plans to pay benefits pursuant to a qualified domestic relations order.

The Tax Reform Act of 1986 has made numerous changes in the tax treatment of qualified plans. In a reversal of a decade-long trend, the act curtails use of retirement vehicles allowing individual choice in all defined contribution plans. However, the trend since World War II of requiring broader employee participation and benefit accrual was continued.

Individual choice in tax-advantaged retirement saving was curtailed primarily by phasing out the deduction for IRA contributions among higher-paid employees covered by an employer pension. The $7,000 limit on 401(k) and other salary reduction contributions also limits individual contributions for some higher-paid employees. The act curtails contributions to all defined contribution plans relative to defined benefit plans by leaving the maximum defined contribution frozen until it falls from one-third to one-fourth of the maximum defined benefit (which will be indexed starting in 1988).

The act continued the postwar trend to broaden benefits within employer plans by extending participation, vesting, and integration requirements. The tests for broadness of coverage among employees were made more stringent. Maximum vesting was shortened--e.g., from 10-year to 5-year cliff vesting. The extent to which Social Security benefits can offset employer pension benefits has been reduced as well.

The Tax Reform Act of 1986 also limits further the use of tax-advantaged saving to retirement. Stricter rules apply to withdrawals, and the 10 percent tax on premature withdrawals from IRAs is extended to preretirement withdrawals from other plans. The act and its effects are discussed further in Chapter V of the main text and Appendix B.

POSTWAR PENSION GROWTH

In 1950, private pension plans paid out about $370 million in benefits to about 450,000 beneficiaries. Benefit payments have about doubled every five years through 1980, bringing the figure to $35.2 billion in 1980 (see Table 29). The rate of increase in the number of beneficiaries slowed over

TABLE 29. GROWTH OF PRIVATE PENSION PLANS, 1950-1980

	1950	1955	1960	1965	1970	1975	1980
Number of Plans	12,330	29,938	63,698	115,122	230,262	445,413	627,518
Number of Workers Covered (In millions)a/	9.8	14.2	18.7	21.8	26.1	30.3	35.8
Percent of Work Force Covered b/	22.5	29.6	37.2	39.5	42.1	46.2	47.2
Total Contributions (In billions of dollars)	**2.08**	**3.84**	**5.49**	**8.36**	**14.00**	**29.85**	**68.97**
Employer Contributions	1.75	3.28	4.71	7.37	12.59	27.56	64.84
Employee Contributions	0.33	0.56	0.78	0.99	1.42	2.29	4.13
Contributions to Retirement Plans as a Percentage of Total Wages and Salaries in Private Industry c/	1.67	2.19	2.46	2.86	3.25	4.73	6.58
Number of Beneficiaries (In millions)	0.45	0.98	1.78	2.75	4.75	7.05	9.10
Benefit Payments (In billions of dollars) a/	0.37	0.85	1.72	3.52	7.36	14.81	35.18
Total Plan Assets (In billions of dollars)	**12.1**	**27.5**	**52.0**	**86.5**	**137.1**	**293.5**	**612.3**

SOURCES: Martha Remy Yohalem, "Employee-Benefit Plans; 1975" in *Social Security Bulletin*, November 1977, pp. 19-28; Table 1 in background material attached to memorandum from Don Thibeau, Executive Director of the National Pension Forum, Department of Labor, to the National Pension Forum of the ERISA Advisory Council, June 14, 1984; Alicia Munnell, *The Economics of Private Pensions* (Washington, D.C.: The Brookings Institution, 1982), Table 2.1, p. 11; and EBRI tabulations based on IRS Letters of Determination data.

(Continued)

a. Estimated by the Social Security Administration primarily from data compiled by the American Council of Life Insurance, *Pension Facts 1976*, and the Securities and Exchange Commission, *1975 Survey of Private Pension Funds*. Data adjusted for duplication resulting from participation in more than one plan and the vesting of benefits, using benchmark data from a special household survey of employed workers conducted in conjunction with the April 1972 *Current Population Survey*. Includes pay-as-you-go and deferred profit-sharing plans, plans of nonprofit organizations, union pension plans, and railroad plans supplementing the federal railroad retirement program. Excludes pension plans for federal, state, and local employees, tax-sheltered annuity plans, and plans for the self-employed.

b. Coverage of private employees in relation to average number of wage and salary employees in private industry (65.6 million in 1975) from Table 6.7 in Department of Commerce, *Survey of Current Business*, July 1976 and July 1983, and Table 6.7 in Department of Commerce, *National Income and Product Accounts of the United States, 1929-1974* (1977).

c. Amounts for private employees in relation to wages and salaries in private industry ($1,082.3 billion in 1980) from Table 6.6, *Survey of Current Business*, July 1976 and July 1983, and from Table 6.6 in *National Income and Product Accounts of the United States, 1929-1974* (1977).

the period, indicating that average payments per beneficiary were increasing, especially during the late 1970s after the passage of ERISA. ERISA clarified previous guidelines defining service and age requirements that largely determine the minimum rate of coverage. Workers and plan managers (including trade unions) since ERISA have focused more on expanding the benefits available to each enrolled worker than on increasing the percentage of workers enrolled.

Plan assets (or reserves) grew quickly in the 1950s (in nominal terms), more slowly in the early 1960s, and more quickly again in the 1970s. Total assets of private pension plans were about $12 billion in 1950 and about $612 billion in 1980.

Employer contributions to pension plans have risen faster than dollar wages. As a result, contributions have risen from under 2 percent of wages in 1950 to over 6 percent in 1980. Were employer contributions and trust fund investment earnings taxable to the employees when earned, as are wages, federal income taxes on those amounts would have been about $50 billion in 1986.

CONCLUSION

The Congress enacted the tax advantages for employer pensions with little debate in the 1920s. Since then, it has consistently chosen to shore up employer plans when problems arose. This has drawn the Congress further and further into the detailed regulation of employer plans. From 1962 to 1981, the Congress also expanded the range of vehicles for tax-advantaged retirement saving, particularly through individual saving. Clearly, the Congress and the public have felt that employer plans provided an important source of retirement income that merited support. At the same time, they have imposed many conditions on the operation of these plans and have supplemented them through individual saving.

APPENDIX B

REQUIREMENTS FOR PLAN QUALIFICATION

Since the Revenue Acts of 1938 and 1942, the Congress has placed substantial conditions on pension, profit-sharing, and stock-bonus plans qualifying for the tax advantages described in Chapter I. The conditions generally require that, in order to qualify, plans must include the rank and file of employees as well as those who have the most to gain from the tax advantages. The plans are also restricted in the extent to which benefits and contributions may favor the highly compensated. With these conditions, the Congress and the Treasury have attempted to use the desire for tax-advantaged saving among a firm's highly paid employees to enhance and encourage retirement saving among all workers. 1/ Still other conditions limit the amount of saving in qualified plans.

Section 401(a) of the Internal Revenue Code lists over 20 separate paragraphs defining the conditions for pension or profit-sharing plans to qualify for tax-favored treatment. The major conditions are set forth in sections 410 through 417 of the code, and in extensive Treasury Department regulations. 2/ The Treasury and the Internal Revenue Service provide additional guidance in general counsel memoranda and Revenue Rulings. The major requirements discussed here are:

- Participation standards,
- Minimum vesting standards,
- Nondiscrimination in coverage,

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1. See Chapter IV for a discussion of how these incentives affect negotiations over compensation.

2. The rules about nondiscrimination in coverage and in benefits and contributions are unique to the tax code. The "labor law" requirements imposed by Title I of ERISA on employee pension plans parallel the qualification rules imposed by the code in the areas of participation, benefit accrual, vesting, and joint-and-survivor requirements.

- Nondiscrimination in benefits and contributions,
- Special rules for top-heavy plans, and
- Limitations on contributions and benefits

There are two consequences of not complying with these requirements. First, employers may not deduct their contributions until such time as workers vest in their accounts (in the case of funded nonqualified plans) or begin to receive payments (in the case of unfunded nonqualified plans). Second, in general, workers would have to pay taxes on savings in these accounts substantially in advance of their actual retirements. This is because ERISA requires that, in any broad-based nonqualified plan, accounts must be funded and vesting must occur within five years. For income tax purposes, workers would be deemed to receive the money in these nonqualified accounts at the time of vesting, rather than at the time of retirement. (Under current law, this result can be avoided only in unfunded nonqualified plans that cover relatively small numbers of upper-income workers.) In addition, any investment income in a nonqualified plan is taxable under the ordinary tax rules applicable to trusts or the sponsoring employer. Though the issue of deductions is not relevant for public and nonprofit employers, their plans must also comply with the requirements for qualified plans in order for their workers to be exempt from current taxation of the contributions made on their behalf and of associated investment earnings.

Participation Standards. In general, section 410(a) prevents plans from excluding from participation workers of the type covered by the plan once they are at least 21 years of age and have completed one year of service (more than 1,000 hours in one year). In addition, very specific rules concerning breaks in service control the circumstances under which a returning worker can be disqualified after a lapse in employment under the retirement plan.

Minimum Vesting Standards. To be qualified a plan must give its covered workers full rights to their contributions or accrued benefits--that is, vest them at least as rapidly as one of the schedules specified in section 411. Before the Tax Reform Act of 1986, three schedules were available: 10-year cliff vesting (the schedule most private plans currently follow); graded vesting rising from 25 percent at 5 years of service to 100 percent at 15 years; and one that combined age and length of service.

Tax reform has shortened the permissible vesting periods. At a minimum, all plans generally must either vest workers after five years or use a graded schedule that rises from 20 percent after three years to 100 percent after seven years. Most defined benefit plans will have to shorten their vesting schedules to meet these tighter standards. Multiemployer plans may, however, still use 10-year cliff vesting.

Finally, as under prior law, plans may exclude workers for more than one year if they vest them fully once the exclusion period is over; tax reform has shortened this alternative exclusion period from three years to two years.

Nondiscrimination in Coverage. The minimum eligibility requirements of sections 401(a)(3) and 410(b) are intended to insure that a broad cross-section of an employer's workers are covered in the plans that the employer sponsors. Before the Tax Reform Act of 1986, a plan was qualified if one of two tests was met. The percentage test was met if the plan covered at least 70 percent of all the employer's workers. The fair cross-section test was met if the plan covered a representative sample of the employer's workers even though large categories of employees--for example, hourly workers--were excluded. The fair cross-section test is prescribed by the Secretary of the Treasury in regulations and revenue rulings.

The Tax Reform Act of 1986 has modified these tests for qualification in ways that will make them harder to satisfy. A plan will qualify if either it covers at least 70 percent of all non-highly compensated employees ("percentage" test), or if the percentage of non-highly compensated employees covered is at least 70 percent of the percentage of highly compensated employees covered ("ratio" test). Alternatively, plans wishing to qualify under the fair cross-section test must meet the additional requirement that the benefit-to-salary ratio for all the employer's non-highly compensated workers must be at least 70 percent of the benefit-to-salary ratio for all highly compensated employees.

Nondiscrimination in Benefits and Contributions. Under sections 401(a)(4), 401(a) (5), 401(l), and 401(m), plans qualify only if the benefits or contributions they provide do not discriminate in favor of covered employees who are highly compensated. Plans may, however, include as benefits and contributions a share of Social Security attributed to the employer. Regulations assume that employers pay half the cost of the old age insurance portion of Social Security. Using this assumption and others, regulations have long specified the maximum adjustments plans may make to account for Social Security (that is, "integrate" with Social Security).

The Tax Reform Act of 1986 altered and restricted the extent of integration. In an offset plan, the maximum offset under any circumstances cannot exceed 50 percent of what the benefit would be without integration. Alternatively, the percentage reduction cannot exceed a percentage factor times the years under the plan (up to 35 years) applied against the participant's final average salary under the plan; the percentage factor for any given participant is a function of the participant's income. Similarly, in excess benefit plans, the plan's annual replacement rate above the integration level cannot exceed twice its rate below that level or, if smaller, 0.75 percent for each year of service under the plan. The requirements for offset plans are a very substantial departure from past requirements, and their effect on offset plans, even on whether such plans will continue to exist, is uncertain.

The defined contribution percentage for salaries above the integration level can be no greater than twice the contribution percentage below, and in no case greater than 5.7 percentage points above, the contribution percentage applicable below the integration level. Thus, if the integration level is $25,000 and the contribution percentage below that level is 5 percent, then the maximum contribution rate on wages in excess of $25,000 is 10 percent. Alternatively, if the contribution rate is 6 percent on wages below $25,000, the maximum contribution on excess wages is 11.7 percent. The 5.7 percentage-point differential represents the employer's share of the Social Security payroll tax.

Separate nondiscrimination rules apply to thrift and salary reduction plans. The contribution rates by, and on behalf of, all highly compensated employees cannot exceed contribution rates by, and on behalf of, all other employees by more than specified ratios that decline from 2.0 at minimal contribution rates to 1.25 at higher contribution rates.

Special Rules for Top-Heavy Plans. Plans in which the accrued benefits for key employees exceed 60 percent of accrued benefits for all employees are classified as top-heavy. Key employees are, generally, top officers, owners, and the highly compensated.

The special rules are designed to provide greater benefits for non-key employees and limit benefits for key employees. Thus, stricter vesting standards require three-year cliff vesting or graded vesting reaching 100 percent by the sixth year. Defined benefit plans must provide minimum benefits to non-key employees equal to 20 percent of pay or, if less, 2 percent for each year of service. Defined contribution plans must contribute as a general rule 3 percent of pay to non-key employees. The minimum benefit and contribution requirements cannot be integrated with Social Security. Maximum benefits for key employees are constrained by allowing only $200,000 of annual compensation to count in the calculation of benefits or contributions, and by stricter limits on what combined plans may pay such employees.

Top-heavy rules apply primarily to small plans where key employees make up a higher fraction of all employees. The rules were enacted in 1982 when special rules for the self-employed (Keogh plans) were removed. Some of the top-heavy rules are extensions of the previous restrictions on plans for the self-employed.

Limitations on Contributions and Benefits. For qualified plans, maximum benefits per employee are limited both as a percent of salary and in absolute dollars. A defined benefit plan can fund a pension no greater than 100 percent of salary, averaged over the last three years of employment, and, in any case, not greater than $90,000. A defined contribution plan can contribute no more than 25 percent of salary and, in any case, not more than $30,000. Inflation indexing for the $90,000 limit is scheduled to resume in 1988. Indexing for the defined contribution limit has been delayed by the Tax Reform Act of 1986 until its value falls to one-fourth of the defined benefit limit. Employees participating in multiple plans--for example, a basic defined benefit pension and a supplementary salary reduction plan--face combined limits designed to avoid the pyramiding of benefits.

The current defined contribution limit is more generous than the defined benefit limit for young high-salaried workers. The reverse is true for older high-salaried workers. Contributions of $30,000 per year for many years will be able to purchase a retirement annuity of more than $90,000 per year, while those made for only a few years will not provide an annuity of $90,000 per year. The exact age at which the two limits are equally constraining depends on market interest rates, the retirement age, and the expected years in retirement. 3/ By raising the defined benefit maximum relative to the defined contribution limit, tax reform has reduced the age at which defined benefit plans accruing the maximum become more generous.

For funding purposes, the $90,000 maximum benefit in defined benefit plans is reduced for early retirement. Before tax reform the re-

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3. For example, if market interest rates are 7.1 percent, the retirement age is 65, and the expected length of retirement is 13 years, then a person age 50 would be equally constrained. That is, if the person contributed $30,000 per year for 15 years, a retirement benefit of $90,000 could be paid for 13 years.

duced maximum was $75,000 at age 55. The Tax Reform Act of 1986 requires that the reductions be strictly actuarial and start from age 65 (instead of 62 as in prior law). This reduction will lower the maximum benefits that can be funded for retirement at age 55 from $75,000 to approximately $40,000 depending on actuarial assumptions.

The Tax Reform Act of 1986 also has added a special $7,000 limit for elective deferrals to most salary reduction plans. The limit will be indexed beginning in 1988.

In addition, an employer is limited in its aggregate contributions to qualified plans to no more than 25 percent of its total compensation base or, if larger, the amount necessary to fund its primary defined benefit plan. Within this limit profit-sharing and stock-bonus plans cannot exceed 15 percent of payroll.

APPENDIX C

THE PROJECTIONS TO 2019

Chapter III provides an estimate of how much the tax advantages for qualified saving will raise retirement incomes for today's younger workers, and how the additions will be distributed among them in retirement. This appendix gives details of the estimation and considers its sensitivity to alternative assumptions.

The first step in making the estimate is to project retirement incomes for a sample of today's younger workers. This projection is based on current tax law and on current social and economic trends. The second step is to make a counterfactual projection in which the tax advantages for qualified plans and IRAs are repealed. Except for these changes in the tax law, the counterfactual uses the same social and economic trends. Thus, the counterfactual projects what retirement income would be in the absence of the advantages, assuming other things remain unchanged. The difference in retirement incomes between the current law and counterfactual projections provides the estimate of gains from the tax advantages.

This appendix describes major characteristics of the current law projection and enumerates the ways in which the counterfactual projection differs from it. Finally it considers how the results could differ under likely alternative projections.

METHODOLOGY OF THE CURRENT LAW PROJECTION

The current law projection was made by ICF Incorporated using their Pension and Retirement Income Simulation Model. 1/ The model starts with a representative sample of the population in 1979 drawn from Census

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1. Documentation on the model and on the CBO projections is available in:

David L. Kennell, John F. Sheils, and John D. Gibson. "The CBO Pension Tax Expenditures Data Base: Methodology and Documentation," unpublished document available from the Congressional Budget Office (December 1984).

(continued)

Bureau surveys. The Census survey information is augmented with data from other sources, including a survey of employer plans. Also added are a projection of macroeconomic conditions and a host of predictions about how people's family status and work experience evolve as they age. The predictions are taken from conditions and trends in the late 1970s and early 1980s, and thus represent a continuation of recent experience. These projections and predictions are applied to the 1979 sample population to simulate future family changes, work experience, retirement incomes, and ages at death.

The model is particularly detailed in its representation of individuals' qualified plan accruals and retirement incomes. In the years a person is projected to participate in an employer plan, he or she is assigned to one of about 300 actual plans based on the industry of employment. Federal, state, and local government plans are included.

If a person's plan has defined contributions, the employer and any employee contributions for the year are calculated and deposited in the person's plan account. The year's interest earnings on previously accumulated assets are added. If the person leaves the plan before retirement, the unvested assets are subtracted and the vested remainder continues accumulating interest until retirement. 2/ Seventy-five percent of married persons with annuities greater than $3,772 (in 1984 dollars) select joint and survivor options.

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1. (continued)

   David L. Kennell and John F. Sheils, "Revised Documentation of the ICF Pension and Retirement Income Simulation Model," unpublished document available from ICF Incorporated, Washington, D.C. (February 1984).

   Similar projections made by ICF Incorporated appear in:

   Sophie M. Korcsyk, *Retirement Security and Tax Policy*(Washington, D.C.: Employee Benefits Research Institute, 1984).

   "Future Retirement Benefits Under Employer Retirement Plans," unpublished document, ICF Incorporated, Washington, D.C. (June 1984).

   The projection used in the latter publication is virtually identical to the CBO current law projection.

2. When a person leaves employment, vested accumulations are paid out as lump sums if (1) the person is under age 30, or (2) the person is under age 62 and the vested accumulations are less than $2,200 in 1984 dollars.

If the plan has defined benefits, the retirement benefit accruing from that year's service is calculated and the employer contribution necessary to fund it is added to the individual plan account. [3] Interest on plan assets is added to the account annually. People dying or terminating employment before vesting forfeit their accrued benefits, while those continuing in service have their retirement accounts credited with a gain. At retirement the total accrued benefit commences as a life annuity. Because the employer's annual contribution is assumed to cover fully the value of benefits accruing in the year, the accumulated assets at retirement are generally just equal to the cost of a life annuity providing the accrued benefits. Couples choose joint and survivor options at the same rate as in defined benefit plans.

Other sources of retirement income are also projected by the model. Income from IRAs is projected from assumptions about IRA contribution rates and an assumption that IRAs are used to purchase life annuities at retirement (but not before age 60). As the projection assumes 1984 tax law, IRAs are assumed to be fully deductible for all contributors throughout their working years. IRA contribution rates are based on experience through 1983. Social Security benefits are calculated in accordance with the 1983 amendments. The calculations use a person's projected work history, age, and family status. The model also projects an aggregate of other taxable income, such as interest and dividends. CBO reduced other taxable incomes for IRA withdrawals (as if they had been taxable savings accounts) to reflect the shifting of saving from regular savings accounts to IRAs.

Federal income taxes can be calculated in each year of the projection. The current law projection is based on 1984 tax law. Consequently, contributions to IRAs and employer contributions to qualified plans go untaxed. Pension benefits and IRA withdrawals are fully taxed, except for the return of employee contributions. Half of Social Security benefits are taxed for taxpayers with incomes above the $25,000 and $32,000 thresholds. Indexing is expanded in the projection to include features of the law whose real value would change dramatically over the simulation period had they not been indexed. Thus, the IRA contribution limit and the limit on the two-earner deduction are both indexed. The Social Security income thresholds are not indexed, however, and by the year 2019 their real values decline to one-fourth their 1984 values. Finally, tax rate brackets, the zero bracket amounts, and the personal exemption are indexed to wage growth rather than price levels. This indexing is done to keep the income tax's share of total income constant.

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[3] The contribution is calculated as the expected present value of accruing benefits where benefits are calculated as of the earliest permissible retirement date upcoming. The expectation is calculated over the probabilities of not dying in each year. This funding method is a variant of the unit credit funding method based on current pay.

Employers often fund according to the entry-age normal cost method or other forward-looking methods which have a more rapid buildup of plan assets than the unit credit method used here. However, when employers obtain waivers for their contributions because of economic difficulties, their funding can lag behind that used here. Faster or slower funding would not clearly raise or lower the size of the measured tax gains. Faster funding would increase the tax-free interest but decrease the gains from income shifting because tax rates are lower earlier in a person's working years.

The macroeconomic projection has the inflation rate leveling off at 4 percent per year by the late 1980s and wage growth averaging just over 5 percent per year. Thus real wage growth averages just over 1 percent per year. The interest rate is 7.1 percent which, when averaged over the period of higher inflation in the early 1980s and the 4 percent rate afterward, allows a 2.4 percent real rate of interest. Employment is projected to continue shifting from manufacturing to services, but the share of employment in other industries changes little. Plan participation in industries with low participation in 1979, like services and construction, grows from 43 percent in 1979 to 55 percent in 2019. Plan participation grows less rapidly in industries with higher coverage in 1979; for example, manufacturing participation grows from 76 percent to 86 percent and public-sector participation stays at about 90 percent over the whole projection.

THE COUNTERFACTUAL PROJECTION

The purpose of the counterfactual is to provide a standard against which the effects of the current tax advantages can be measured. The standard chosen is accrual taxation on plan and IRA participants--that is, all income is taxed in the year it is earned.

Accrual taxation is implemented by treating employer plan contributions as additional wages paid directly to the employee. The amounts remain the same; only their form of payment changes. This is based on the proposition discussed in Chapter IV, that the employees largely "pay" for their employer's plan contributions by accepting lower wages. Thus, in the absence of special tax advantages for employer contributions, workers would demand that the contributions be paid as wages.

As wages, the contributions are subject to tax in the year paid. IRAs are not allowed, so that no deposit in a savings account is deductible. The counterfactual assumes people continue to save for retirement a portion of their now taxable income. However, all interest earned by the savings is taxable in the year earned. At retirement, the available savings are used to purchase retirement annuities. Because the savings used to purchase the annuity have already been taxed, only that portion of the annuity representing postretirement interest is taxable.

The projection remains unchanged in all characteristics not directly altered by the tax change. Each person's projected family status stays the same. Years of work, other earnings, job changes, retirement dates, and death remain as projected. Interest rates and other economic conditions are unchanged. Consequently, all changes in retirement income are attributed directly to removal of the income tax deferral. Of course, some of these events could be different in the absence of the deferral and employer pension plans. People might change jobs more frequently and retire at different ages. Interest rates could rise. Thus the change in retirement income is the impact effect of the deferral, not the full measure after all ensuing adjustments.

No Change in Consumption

The counterfactual assumes that employees continue to save all of the after-tax portion of their employer plan contributions and of their own IRA contributions. Further, all interest earned by the savings--after payment of the income tax--is left in the account. For example, suppose under current law an employer contributes $1,000 to a plan fund for an employee who is in the 28 percent tax bracket. In the counterfactual, the employer pays the $1,000 to the employee as wages, $280 is taken out in taxes, and the employee saves the remaining $720. If the savings earn $43 interest in the first year, 28 percent is paid in taxes and the remaining $31 is saved, bringing the balance to $751. The assumption that people save the after-tax remainder of their employer plan contribution and their own IRA contribution means that they keep their after-tax saving unchanged in the absence of the deferral.

The constant after-tax saving assumption is analytically convenient as well as plausible. The plausibility of this assumption is based on empirical studies evaluated in Chapter IV; its convenience is discussed here. As long as working people continue to save all of the after-tax portion of retirement contributions in the absence of the tax advantage, their consumption in their working years remains unchanged. This means that the full effect of the deferral is reflected in retirement income. Consequently, the full effect of the deferral can be captured by comparing its effect on one year's retirement income. In the immediately preceding example, keeping the employee's after-tax saving at $720 meant that working year consumption neither rose nor fell in response to the tax change. The only change is that the saving accumulates less by the time of retirement and will therefore buy a lower retirement annuity.

Shift in Retirement Savings

The distribution of savings in the counterfactual diverges somewhat from that projected under current law. Because employer plan contributions are paid directly to employees as wages, savings from these funds become the personal property of employees. They cannot forfeit the funds by leaving before being vested or dying before retirement. Furthermore, in defined benefit plans, continuing employees receive no survivor gains that under current law mirror the losses of terminating employees. The net effect is to shift retirement savings and hence retirement income toward people failing to vest under current conditions and away from those continuing in service until retirement. Consequently, a person working under several plans but failing to vest can receive a higher retirement income under the counterfactual in spite of the increased taxation.

ALTERNATIVE ASSUMPTIONS

Very specific assumptions must be made in order to project future conditions, although much uncertainty surrounds many of these assumptions. Alternative courses of events are quite plausible, and these could lead to changes in retirement incomes and in the importance of the tax deferral. This section considers how such alternative assumptions would affect the findings.

Including Payroll Taxes and State and Local Income Taxes

Most state and local income tax systems defer tax on employer plan accruals in the same way the federal income tax does. Most of them also defer taxes on IRAs. Therefore, the full effect of the tax deferral should include the deferral of state and local income taxes. Further, if employer plan contributions were treated as additions to wages, they would be subject to payroll taxes as well. Contributions to IRAs are already subject to payroll taxes.

The estimated benefit of the deferral would be larger and its tilt toward higher-income retirees more pronounced if state income taxes were included in the counterfactual. The additional taxes on contributions and interest accruals would reduce retirement saving and retirement incomes even further than in the counterfactual. Because most state income taxes are progressive, the reduction would be greater at higher incomes.

The estimated benefit from the deferral would not change on average if the counterfactual subjected employer contributions to payroll taxes, because Social Security benefits would rise equally. However, the tilt in the Social Security formula means that lower-wage people would show even less gain from the tax deferral than currently calculated. Those just under the taxable maximum wage would show a bigger gain while those earning above the maximum would have the same gain as currently calculated.

Revenue Neutrality

A broader tax base that included contributions to and earnings of employer plans and IRAs would raise total revenues. Higher payroll tax revenues would be accompanied by greater future Social Security obligations, resulting in no long-run surplus. Income tax revenues, however, would rise with no offsetting fiscal obligation. Thus, income tax rates could be lower in the counterfactual.

For simplicity, the counterfactual has been constructed using the same income tax rates as in the current law projection. Lower rates would increase after-tax retirement incomes in the counterfactual and reduce the estimated gain from the tax advantages. The magnitude of this distortion appears to be small on the basis of aggregate calculations. A revenue-neutral counterfactual would reduce the average gains estimated above by roughly one-twentieth, assuming the tax reduction would match the existing distribution of taxes paid. 4/ That is, the average gain estimated for retired couples of 21 percent would be 20 percent.

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4. An aggregate approximation of the distortion from not using a revenue-neutral counterfactual is developed here. One main revenue loss from the tax advantages arises from not taxing the interest earnings of retirement saving. The tax on contributions is repaid in present value terms when the savings are withdrawn in retirement, except for any reduction in rates in retirement. Assets in employer plans, IRAs, and Keoghs were about $1 trillion in 1982, and probably 70 percent of this repre-

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A revenue-neutral counterfactual would also redistribute consumption in the working years between those doing above- and below- average amounts of retirement saving. People saving more than average would have their tax burden raised because the broader base would more than offset the lower tax rates. Consumption in their working years would be reduced as well as in retirement. Below-average users of retirement savings would have their taxes reduced, allowing them to increase consumption in their working years. The amount of the redistribution would be small as long as the rate reduction was small, as indicated above. If the tax reduction was designed to keep the relative burden among income classes constant, the redistribution would occur only among the above- and below- average savers in the same income class. In summary, the tax advantage for retirement saving has required income tax rates to be higher than they otherwise have to be. These higher rates have redistributed consumption from those making little use of the deferral to those making above-average use of it.

Greater Sharing Between Spouses

The current law projection finds many single women receiving small gains from employer plans and IRAs. One reason for this outcome in the projection is that a noticeable fraction of husbands will continue to eschew survivorship options. The projection assumes that one-fourth of married people with pensions in excess of $3,772 (1984 dollars) take the individual option. Furthermore, the projection does not split future pension benefits among divorcing couples. Recent trends, especially as evidenced by the Retirement Equity Act, may lead to more common use of joint and survivor options and greater sharing of pension assets among the divorced. If these trends continue, retirement incomes of some elderly singles will be raised, and the gains of the tax advantages will be more evenly spread than in the estimate. Other factors contributing to the economic hardship of elderly women are the lower pay and less regular work pattern of women, and the shorter life spans of men. These would also need to change to eliminate the disadvantage faced by elderly women.

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4. (continued)
sented after-tax saving by individuals. These assets would earn no more than 10 percent in taxable income in the year, or $70 billion. Total taxable income of individuals in 1982 was $1,446 billion, so adding the asset income from employer plans, IRAs, and Keoghs would raise the tax base by at most 5 percent. Thus tax rates could be reduced by about 5 percent in a revenue-neutral counterfactual. This means that 95 percent of the tax rate increase on retirement savings in the counterfactual presented would remain in a revenue-neutral counterfactual. Because gains are roughly proportional to the tax rate increase, a revenue-neutral counterfactual would show gains equal to about 95 percent of those estimated in this paper.

Reduced Pension and IRA Participation

The projection assumes plan participation continues to grow in the next 40 years. In the early 1980s, however, participation declined. Also, provisions of the Tax Reform Act of 1986 could discourage plan formation among small employers, as discussed in Chapter V. If these recent changes imply lower future growth than projected, the gains from the tax advantage will be less widely spread, and their distribution will be tilted more toward upper incomes. Future growth in employer plan coverage must come disproportionately from the lower paid because coverage is already so extensive among the higher paid. If this growth fails to occur, gains will decline most for the lower paid.

Projected IRA usage is very uncertain because of the large changes in IRA provisions in 1981 and 1986. The size of future contributions could decline dramatically from that projected in the simulation because of restricted deductions, or if IRA limits either remain fixed at current levels or rise less rapidly than inflation. Slower growth of IRAs would lead to smaller average benefits from the deferral, with the bigger losses coming among the higher paid who are projected to use IRAs the most. On the other hand, the projection omits the rapid growth in salary reduction plans that has occurred in the last few years. If contributions to these plans continue to grow, their growth could more than offset the effects of slower IRA growth. So far, 401(k) contributions appear to come more evenly from all income groups than do IRA contributions.

Other Alternatives

Higher rates of interest would lead to greater estimated gains from the tax advantage because one key component of the gain is tax-free interest. Lower rates of interest would have the opposite effect. Slower economic growth would lead to lower wages, lower pensions, and, therefore, lower average gains. In percentage terms, however, the tax advantage would not be affected much by slower wage growth.

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